Lehigh Testing Laboratories, Inc.
a division of THE MMR GROUP
308 WEST BASIN ROAD • P.O. BOX 903 • NEW CASTLE, DELAWARE 19720 • (302) 328-0500

030-14700

U.S. NUCLEAR REGULATORY COMMISSION
Region I -- 475 Allendale Road
King of Prussia, PA 19406

September 20, 1988

ATTN: Licensing Department

SUBJ: Request for Amendment to Radiography License No. 07-01173-03

(A) We are requesting an amendment to our license to replace Mr. Roger F. Eddy with Mr. Charles R. Gilkey as Lehigh's Radiation Safety Officer. We would also replace Mr. Charles R. Gilkey with Mr. Gary C. Biddle as Lehigh's Assistant Radiation Safety Officer and replace Mr. Don Pelligrino with Mr. J. Barry McCrudden as General Manager. We enclose Mr. Gilkey's, Mr. Biddle's, and Mr. McCrudden's qualifications as Revision #5 of Appendix E, Page 1 and 2 of the Manual for your review and approval. We also have revised the emergency telephone number for the RSO and ARSO in Appendix A, Revision #6.

(B) We have corrected the Manual's description of the way gamma radiography equipment is to be assembled (Section 2.2.3 Page 1) and disassembled (Section 2.2.5 Page 6) requires the guide tube to be connected to the exposure device before the crank assembly and the crank assembly to be disconnected before the guide tube. The error has been corrected (see Section 2.2.3, Page 1, and Section 2.2.5, Page 6, Revision #3 enclosed).

(C) Several forms have been revised, we enclose copies of those revised forms:

FORM 201-L - This form was revised to include response check for the survey meters, operational check of system, and to include the restrictions for the permanent facility at Lehigh Testing Labs.

FORM 201-F - This form was revised to include operational check of the system, and additional paperwork requirements for The State of Maryland/

FORM 206 - Certificate of Calibration - Pocket Dosimeters: This form was revised to include a column for Drift readings and Disposition of Dosimeters.

FORM 207 - Certificate of Survey Meter Calibration: This form was revised to show the radiation level of the standard source printed in the proper location and to add a column for as found condition.

Please find enclosed our check for $230.00 to cover the amendment fee. Your prompt attention to this amendment request would be sincerely appreciated. Please contact the undersigned with your questions or comments.

Sincerely,

LEHIGH TESTING LABORATORIES, INC.

J. Barry McCrudden
General Manager

Enclosures

JBC;crg

QUALIFICATIONS OF RESPONSIBLE PERSONNEL FOR RADIATION SAFETY MANAGEMENT

CHARLES R. GILKEY - RADIATION SAFETY OFFICER

EDUCATION:

1965-66 Christiana Senior High School
1983 Lehigh Testing Lab, Initial classroom Radiation Safety Training - 12 hours
1983 Lehigh Testing Lab, On the job training as Trainee - 40 hours
1984 Lehigh Testing Lab, Radiation Safety training - 40 hours
1986 Amersham Tech/Ops Radiation Safety Training - 40 hours

WORK EXPERIENCE:

1983 Lehigh Testing Labs - New Castle, DE, Radiographer Trainee, Extensive on-the-job training in radiation safety and control
1983 Qualified by examination as Assistant Radiographer at Lehigh Testing upon completion of instruction and training of requirements administered by the RSO.
1984 Qualified by examination as Radiographer at Lehigh Testing upon completion of instruction and training requirements administered by the RSO.
1986 Promoted to Chief Radiographer in Lehigh Testing's NDT Department after receiving three years of special job training and instruction from Lehigh's Radiation Safety Officers in various radiation safety and regulatory matters. Has demonstrated through understanding of the equipment, NRC regulations, and Lehigh's internal radiation safety procedures applicable to Industrial Radiography.
1986 Appointed Assistant Radiation Safety Officer. Worked with Radiation Safety Officer to set up implement and maintain Radiation Safety System and Training Program at Lehigh Testing Laboratories, Inc.
1988 Appointed Radiation Safety Officer.

J. BARRY McCRUDDEN - GENERAL MANAGER

EDUCATION:

1960-63 Ursinus College, Collegeville, PA
1963-67 Fairleigh Dickinson University, Teaneck, NJ - B.S. Degree in Business Management, American Management Association Presidents course plus various other materials and management courses.

WORK EXPERIENCE:

1959-68 Phoenix Steel, Claymont De. Various production and sales positions.
1968-71 Industrial Service Centers, Inc., Cambridge, Ma. Responsible for sales of stainless steels.
1971-75 Senior Salesman, Phoenix Steel, Philadelphia, Pa. Specialized in major accounts and development of new accounts.
1975-84 Phoenix Steel, Various Management Duties at various Phoenix Steel locations.
1984-85 Phoenix Steel, Claymont, De. Manager, Sales Service and Conversion Sales.

QUALIFICATIONS OF RESPONSIBLE PERSONNEL FOR RADIATION SAFETY MANAGEMENT (cont'd)

J. BARRY McCRUDDEN - GENERAL MANAGER

WORK EXPERIENCE: (cont'd)

1985-86 Thyssen Specialty Steels, Inc., Philadelphia, Pa. National Manager of Plate Products.
1986-87 Groundwater Recovery Systems, Inc., Glenmoore, Pa. General Manager.
1987- Lehigh Testing Laboratories, Inc., New Castle, De. General Manager.

GARY C. BIDDLE - ASSISTANT RADIATION SAFETY OFFICER

EDUCATION:

1976 Pennsville Memorial High School Graduate
1981 Radiation Safety Training (Branch Labs)
1986 Lehigh Testing Lab, Initial classroom Radiation Safety Training - 12 hours

WORK EXPERIENCE:

1976-79 United States Army (honorable discharge). U.S. Army Helicopter Aircraft Crewman with over 600 hours of flight time.
1980-81 Taylor - Davis Corporation, Newport, De. (Fabricator)
1981-86 Branch Radiographic Laboratories. Radiographer at Hope Creek and Salem Nuclear Generating Stations.
1986 Lehigh Testing Laboratories, Inc., New Castle, De. - Level II NDT Technician, Certified SNT-TC-1A in MT, PT, and RT. Responsible for conducting NDE tests and inspections per client requests, specified technical procedures, and applicable safety requirements.
1988 Lehigh Testing Lab, Appointed Assistant Radiation Safety Officer.

ROGER F. EDDY - RADIATION SAFETY CONSULTANT

EDUCATION:

1955-56 Newpatlz State Teachers College
1973 General Dynamics Electric Boat Division - Radiation Safety - 160 hrs.
1976 Peabody Testing X-Ray Engineering - Radiation Safety - 40 hrs.
1983 Peachbottom Nuclear Power Plant - Radiation Safety - 24 hrs.
1986 Oyster Creek Nuclear Power Plant - Radiation Safety - 24 hrs.

WORK EXPERIENCE:

1973-76 General Dynamics Electric Boat Division; Grotton, CT - Radiographer.
1976-78 Peabody Testing X-Ray Engineering; Foster City, CA - Radiographer.
1979-80 Giant Incorporated; Pensacola, FL - Manager of Field Operations and Radiation Safety Officer.
1980-84 Gilbert Associates; Reading, PA - Corporate Level III, Taught Radiography and Radiation Safety to Clients both National and International.
1984-85 Twin City Testing; Wausau, WI - Supervisor NDE Department and Assistant Radiation Safety Officer.
1986-88 Lehigh Testing Laboratories, Inc.; New Castle, DE - Operations Manager and Radiation Safety Officer.

EMERGENCY TELEPHONE NUMBERS

A. RESPONSIBLE MANAGEMENT PERSONNEL AT LEHIGH

CHARLES R. GILKEY, RADIATION SAFETY OFFICER

(Bus): (302) 328-0500
(Res): (302) 731-4197

GARY C. BIDDLE, ASS'T RADIATION SAFETY OFFICER

(Bus): (302) 328-0500
(Res): (609) 678-4943

J. BARRY McCRUDDEN, GENERAL MANAGER

(Bus): (302) 328-0500
(Res): (215) 399-1017

ROGER F. EDDY, RADIATION SAFETY CONSULTANT

(Res): (609) 467-5185

B. REGULATORY AGENCIES

U.S. NUCLEAR REGULATORY COMMISSION (isotope radiography performed in Delaware & in other non-agreement states)
Region I - Office of Inspection and Enforcement
475 Allendale Road
King of Prussia, PA 19406
(215) 346-5000 (24 hrs)

STATE OF DELAWARE (X-ray radiography operations)
Division of Public Health
Bureau of Radiological Control
Capitol Square
Dover, DE 19801
(302) 736-4731

STATE OF MARYLAND (all isotope radiography performed in Maryland)
Department of the Environment
Center for Radiological Health
201 Preston Street
7th Floor Mailroom
Baltimore, MD 21202
(301) 333-3130
(301) 243-8700 << Call this number in event of actual radiation emergencies

2.2.0 GENERAL OPERATING PROCEDURES FOR GAMMA RADIOGRAPHY EQUIPMENT

2.2.1 General

(A) Gamma radiography equipment may be operated only by a certified Radiographer or an Assistant Radiographer who is working under the direct personal supervision of a Radiographer.

(B) Since the source emits high levels of radiation, it is good practice to operate the the equipment from as great a distance as practical and, if possible, from behind a radiation shield such as a heavy steel or concrete object or the corner of a building.

(C) RADIOGRAPHY MUST ONLY BE PERFORMED IN A RESTRICTED AREA WHICH IS POSTED WITH THE APPROPRIATE WARNING SIGNS AND IS SECURED AGAINST ENTRY BY UNAUTHORIZED PERSONS (SEE SECTIONS 1.8.0 AND 1.9.0). While assembling the system, it is important to keep the exposure device locked at all times prior to operation.

2.2.2 Daily Inspections of Equipment

Daily inspection of the equipment is required to assure that the equipment is in good operating condition. See Section 2.6.1 for requirements.

2.2.3 Assembly Procedures

(A) Position and secure the source stop of the master source guide tube at the radiographic focal position using the tripod stand and swivel clamps.

(B) Determine where the control unit will be positioned (as far away from the focal position as possible and preferably behind a radiation shield) and lay out the control housing with no bend radius less than 36 inches.

(C) Connect the control unit to the exposure device according to the sequence illustrated in Figures 2.4 through 2.8.

(D) Determine where the exposure device will be positioned and connect the extender source guide tubes as required, laying them as straight as possible and with no bend radius less than twenty inches. (A smaller bend radius will restrict the movement of the control cable.)

(E) Remove the storage plug from the exposure device and connect the source guide tube(s) to the exposure device.

(F) Before operation check all connections and bend radii, and check the position of the source stop, which represents the radiographic focal position of the source.

2.2.5 Disassembly Procedures

(A) Unscrew the source guide tube sections and remove the master guide tube from the tripod stand. Place the plastic caps on the tubes and on the Model 661 connector to prevent dust and dirt from entering the tubes.

(B) Insert the storage plug into the guide tube connector and tighten.

(C) Unlock the exposure device and rotate the selector ring from LOCK to CONNECT. The control unit connector will partially disengage.

(D) Refer to Figures 2C through 2G to disengage the control unit from the exposure device.

(E) Replace the storage cover in the control unit connector and rotate the selector ring to the LOCK position. Remove the key and engage the lock to secure the exposure device. Survey the entire circumference of the device with the survey meter to insure that the source is properly secured.

(F) Disassemble the tripod stand and store the components where they will not be subject to any undue stress or abuse. The exposure device itself, of course, must be stored in the shielded storage vault when not in use.

SOURCE UTILIZATION REPORT - LAB

Date/Time: _____; Location: 308 W. BASIN ROAD, NEW CASTLE, DE (PERM. FACILITY)

LTL#: _____; Customer: _____; Job: _____

EQUIPMENT IDENTIFICATION & INSPECTION CHECKLIST:

Survey Meter(A) - Model:_____S/N:_____Cal Due Date:_____Batt OK [] Response OK: []

Survey Meter(B) - Model:_____S/N:_____Cal Due Date: _____Batt OK [] Response OK: []

Radioactive Source - Isotope: Iridium 192; Source S/N:_____ Activity: _____Curies;

Exposure Device - Tech/Ops Model_____ Exposure Device S/N:_____ Initial Survey at Surface of Exposure Device:_____mR/hr (should be less than 2 mR/hr per Ci); Inspection of Lock Assembly (free operation) []: Inspection of Selector Ring (free operation) []: Inspection of Safety Caps, Screws (none loose or missing) []: Inspection of End Fittings & Connectors (clean, tight, undamaged) []: Inspection of Control Cable and Guide Tubes (undamaged) []: Proper Warning Labels on Device []: Control Crank Model No: _____ S/N: _____; Inspection of Crank (free operation) []: Operations Check of System []: Collimator/Attenuation (check one): T/O Mod. 527 (1/1000) []: T/O Mod. 714 (1/70) Mini-Lead []: T/O Mod. 654 (1/200) Lead []: T/O Mod. 799 (1/20) Mini-Tung. []: Other (describe) _____

REQUIRED DOCUMENTATION CHECKLIST:

Radiation Safety Manual, License & Amendments: ___; Source Decay Chart ___; Record of Personal Qualifications (Wallet Card): ___

USAGE & STORAGE OF RADIOACTIVE SOURCE:

Total Number of Exposures: _____; Total Time for all Exposures: _____min; Maximum Exposure Time in Any One Hour: _____min; Date/Time Stored: _____; Storage Location: Vault - 308 W. Basin Rd Final Survey Readings - At Surface of Exposure Device: _____mR/hr; At Surface of Storage Vault: _____mR/hr

RESTRICTIONS - If constant surveillance cannot be maintained of all unrestricted areas (including the roof), the following restrictions are in effect for work in the permanent exposure room: (A) a collimator having an attenuation factor of 1/20 or better shall be used; (B) the radiation beam shall not be directed above the horizontal plane and shall be no higher than three feet off the floor, and shall be located within the painted lines on the floor; (C) maximum exposure minutes in any one hour shall be less than 1000/curies. Variances from these procedures require prior approval by the RSO and the circumstance must be documented below.

REMARKS - Describe any unusual occurrences, equipment malfunctions, etc:

_____

_____

SKETCH OF RADIOGRAPHIC SETUP:

The permanent radiation room is sketched on the reverse side of this sheet.

Signatures: _____

(Radiographer in charge) (Assistant Radiographer) (SUR approved by)

Form 201-L (Rev. 9-16-88)

SOURCE UTILIZATION REPORT - FIELD SITE

Date/Time: _____; Site: _____

LTL#: _____; Customer: _____; Job: _____

EQUIPMENT IDENTIFICATION & INSPECTION CHECKLIST:

Survey Meter(A) - Model:_____S/N:_____Cal Due Date:_____Batt OK [] Response OK: []

Survey Meter(B) - Model:_____S/N:_____Cal Due Date: _____Batt OK [] Response OK: []

Radioactive Source - Isotope: Iridium 192; Source S/N:_____ Activity: _____Curies;

Exposure Device - Tech/Ops Model_____ Exposure Device S/N:_____ Initial Survey at Surface of Exposure Device:_____mR/hr (should be less than 2 mR/hr per Ci); Inspection of Lock Assembly (free operation) []: Inspection of Selector Ring (free operation) []: Inspection of Safety Caps, Screws (none loose or missing) []: Inspection of End Fittings & Connectors (clean, tight, undamaged) []: Inspection of Control Cable and Guide Tubes (undamaged) []: Proper Warning Labels on Device []: Control Crank Model No: _____ S/N: _____; Inspection of Crank (free operation) []: Operations Check of System []: Collimator/Attenuation (check one): T/O Mod. 527 (1/1000) []: T/O Mod. 714 (1/70) Mini-Lead []: T/O Mod. 654 (1/200) Lead []: T/O Mod. 799 (1/20) Mini-Tung. []: Other (describe) _____

Vehicle Checklist - Warning Signs []: Rope or Tape []: Spare Tire []: Fire Extinguisher []: Vehicle Tools []: Flares []: Flashlight []: Spare Batteries []: Dosimeter Charger: []: Emergency Phone Nos. Displayed [].

REQUIRED DOCUMENTATION CHECKLIST:

Radiation Safety Manual, License & Amendments []: Source Decay Curve []: Record of Personal Qualifications (Wallet Card) []:

FOR ALL RT WORK IN MARYLAND: Quarterly Maintenance Record for All Equipment Used []: Personal Dosage Record []: MD Regulations []: Notification to Maryland officials regarding LTL Work Schedule []: Copy of Letter Dated 4/3/87 [].

TRANSPORT RECORD:

Proper Shipping Name: Radioactive Material, Special Form, N.O.S. - UN 2974; Type of Source: Iridium 192; Activity of Source: see above; Label Type: Radioactive _____; Transport Index: _____; Source Serial No., Container Model No., and Container Serial No.: see above; Container Specification No.: NRC ID# USA/ _____ /B TYPE B;

Date of Shipment: _____; Shipper: Lehigh Testing Laboratories, Inc., 308 W. Basin Rd., New Castle, DE 19720; Destination: _____

SHIPPER'S CERTIFICATION: All shipping procedures have been satisfied. This is to certify that the above named packages are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation, according to the applicable regulations of the U.S. Department of Transportation. (signed below)

Signatures: _____

(Radiographer in charge) (Assistant Radiographer) (SUR approved by)

Form 201-F (two-sided) (Rev. 9-16-88)

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CERTIFICATE OF CALIBRATION - POCKET DOSIMETERS

DOSIMETER MAKE, MODEL, SERIAL NO.	STANDARD DOSE	MEASURED DOSE INITIAL	FINAL	DOSE	DRIFT	DISP

Calibration Source Standard: EON Cesium 137 > 10 mci Device: _____

Approximate Activity this Date: _____

All readings are in mR. All dosimeters read from 0 to 200 mR unless otherwise noted.

Drift readings taken 24 hours after exposure is completed.

THIS CERTIFIES THAT THE POCKET DOSIMETERS LISTED ABOVE HAVE EACH BEEN CALIBRATED ON _____ ACCORDING TO LEHIGH'S WRITTEN PROCEDURE AND ARE CAPABLE OF MEASURING RADIATION DOSAGES TO WITHIN A 30% ACCURACY TOLERANCE. THESE POCKET DOSIMETERS MUST BE RECALIBRATED ON OR BEFORE _____.

Calibrations performed by: _____
(signature) (title) (date)

Form 206 (rev 9-16-88)

Lehigh Testing Laboratories, Inc.
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308 WEST BASIN ROAD • P.O. BOX 903 • NEW CASTLE, DELAWARE 19720 • (302) 328-0500

CERTIFICATE OF SURVEY METER CALIBRATION

METER TYPE:_____ MODEL #:_____ SERIAL #:_____ LTL#_____

SCALE	RADIATION LEVEL	METER READINGS AS FOUND	METER READINGS ADJUSTED	RADIATION LEVEL	METER READINGS AS FOUND	METER READINGS ADJUSTED
1X	2 mr/hr			8 mr/hr		
10X	20 mr/hr			80 mr/hr		
100X	200 mr/hr			800 mr/hr		

CALIBRATION SOURCE STANDARD: CESIUM 137 DEVICE S/N:_____ SOURCE S/N:_____

ACTIVITY THIS DATE:_____

THIS DOCUMENT CERTIFIES THAT THE ABOVE INSTRUMENT WAS CALIBRATED ON _____ ACCORDING TO LEHIGH'S WRITTEN PROCEDURE AND IS CAPABLE OF MEASURING RADIATION LEVELS IN ALL THREE RANGES TO WITHIN A 20% ACCURACY TOLERANCE. IN ACCORDANCE WITH THE REQUIREMENTS OF NRC REGULATION 10 CFR 34.24, THIS INSTRUMENT MUST BE RECALIBRATED ON OR BEFORE _____.

REMARKS:

Calibration performed by_____
(signature) (title) (date)

Form 207 (Rev 9-16-88)

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 03320
STATUS CODE: 0
FEE CATEGORY: 30
EXP. DATE: 19890930
FEE COMMENTS: _____

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: LEHIGH TESTING LABS., INC.
RECEIVED DATE: 880921
DOCKET NO: 3014700
CONTROL NO.: 109613
LICENSE NO.: 07-01173-03
ACTION TYPE: AMENDMENT

2. FEE ATTACHED
AMOUNT: $230.00
CHECK NO.: 011557

3. COMMENTS

SIGNED S. J. Brown
DATE 88/09/26

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED /✓/)

1. FEE CATEGORY AND AMOUNT: 30 $230

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:
AMENDMENT ✓
RENEWAL _____
LICENSE _____

3. OTHER _____
_____

SIGNED D. Graybeal
DATE 10/13/88