MATERIALS LICENSE

Amendment No. 01

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

OFFICIAL RECORD COPY

Licensee	
1. Consolidated NDE, Inc.	In accordance with the letter dated May 15, 1997, 3. License Number 29-21452-02 is amended in its entirety to read as follows:
2. 6 Woodbridge Avenue Woodbridge, New Jersey 07095	4. Expiration Date August 31, 2001
	5. Docket or Reference No. 030-34195

6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License
A. Cesium 137	A. Sealed sources	A. 100 millicuries
B. Americium 241	B. Sealed neutron sources	B. 500 millicuries
C. Gadolinium 153	C. Sealed source (Amersham Model GDC.CY1)	C. 1000 millicuries

9. Authorized use

A. and B. For possession and use in Troxler Electronic Laboratories, Inc., Campbell Pacific Nuclear Corp., Humboldt Scientific, Inc., Seaman Nuclear Corporation, or Soiltest, Incorporated devices which have been evaluated and approved for licensing purposes under a license issued by the U.S. Nuclear Regulatory Commission or any Agreement State.

C. For use in Amersham Lixiscope Model LS-82 for industrial applications including the inspection of insulated steel pipe, uninsulated plastic tubing, and associated fittings and joints.

CONDITIONS

10. Licensed material may be stored at the licensee's facilities located at 6 Woodbridge Avenue, Woodbridge, New Jersey and may be used only at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.

11. A. Licensed material in Items 6.A. and 6.B. shall only be used by, or under the supervision and in the physical presence of, Bruce R. Ballard or individuals who have successfully completed the manufacturer's training program for gauge users, have been instructed in the licensee's routine and emergency operating procedures and who have been designated in writing by the Radiation Safety Officer.

B. Licensed material in Item 6.C. shall only be used by, or under the supervision and in the physical presence of, Bruce R. Ballard or individuals who have received the training by the manufacturer or as described in letter dated June 16, 1997 and have been designated in writing by the Radiation Safety Officer.

License number 29-21452-02

MATERIALS LICENSE
SUPPLEMENTARY SHEET

Docket or Reference number 030-34195

Amendment No. 01

12. The Radiation Safety Officer for this license is Bruce R. Ballard.

13. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.

B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.

C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.

D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.

E. Sealed sources and detector cells need not be leak tested if:

(i) they contain only hydrogen-3; or

(ii) they contain only a radioactive gas; or

(iii) the half-life of the isotope is 30 days or less; or

(iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or

(v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source or detector cell shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Director, Division of Nuclear Materials Safety, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source or detector cell involved, the test results, and corrective action taken.

G. The licensee is authorized to collect leak test samples for analysis by Boart Longyear CPN. Alternatively, tests for leakage and/or contamination may be

License number 29-21452-02

MATERIALS LICENSE
SUPPLEMENTARY SHEET

Docket or Reference number 030-34195

Amendment No. 01

performed by persons specifically licensed by the Commission or an Agreement State to perform such services.

14. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.

15. The licensee shall conduct a physical inventory every six months to account for all sealed sources and devices containing licensed material received and possessed under the license.

16. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.

17. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport, storage or when not under the direct surveillance of an authorized user.

18. Any cleaning, maintenance, or repair of the gauge(s) that requires removal of the source rod shall be performed only by the manufacturer or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

19. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

20. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Application dated June 14, 1996
B. Letter dated August 16, 1996
C. Letter dated May 15, 1997
D. Letter dated June 6, 1997
E Letter dated June 16, 1997

For the U.S. Nuclear Regulatory Commission

Date JUN 23 1997

By ORIGINAL SIGNED BY:
JUDITH A. JOUSTRA

Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406

JUN 23 1997

Mr. Bruce Ballard
Radiation Safety Officer
Consolidated NDE, Inc.
6 Woodbridge Avenue
Woodbridge, New Jersey 07095

Dear Mr. Ballard:

This refers to your license amendment request. Enclosed with this letter is the amended license.

Please review the enclosed document carefully and be sure that you understand and fully implement all the conditions incorporated into the amended license. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I Office, Licensing Assistance Team, (610) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Thank you for your cooperation.

Sincerely,

ORIGINAL SIGNED BY:
JUDITH A. JOUSTRA

Judith A. Joustra
Division of Nuclear Materials Safety

License No. 29-21452-02
Docket No. 030-34195
Control No. 124575

Enclosure:
Amendment No. 01

DOCUMENT NAME: R:\WPS\MLTR\L2921452.02
To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DNMS/RI	N	DNMS/RI					
NAME	JJoustra							
DATE	06/23/97		06/ /97		06/ /97		06/ /97	

OFFICIAL RECORD COPY ML 10

CONSOLIDATED
NDE, INC.

June 16, 1997

Judith A. Joustra
Division of Nuclear Materials Safety
US Nuclear Regulatory, Region 1
475 Allendale Rd
King of Prussia, PA 19406-1415

Subject: License Amendment

Reference: License No. 29-21452-02
Docket No. 030-43195
Mail Control No. 124575

Dear Ms. Joustra:

Enclosed is a copy of the training course outline and examination from the manufacturer, who is licensed in the State of Illinois.

Also enclosed is a copy of my certificate of training for radiation safety and I will submit a copy of my certificate of training to be an instructor as soon as I received it.

Respectfully Submitted,

Bruce R. Ballard
RSO

enc: As stated

6 Woodbridge Avenue Woodbridge, NJ 07095
908-636-4550 fax 908-636-5845
Branch Offices:
Atlanta, GA Charlotte, NC Clarksburg, WV East Hampton, CT

SECTION B

1. LIXI Training Course

The NRC required that Lixi, Inc. provide a Training Course to all industrial and veterinary users. After such training was completed and certified, the proposed user could then make an application to the NRC or Agreement State to recieve a license for a lixiscope. Lixi, Inc. must recieve a copy of each user's NRC or state license before Lixi, Inc. can legally deliver a unit to the user.

If there is anything you do not understand, ask your instructor or call Lixi, Inc. Customer Service at (312) 620-5656. Either Bob Savini, Executive Vice President or Bruce Van Pelt, Research director can assist.

2. Explanation of Key Elements in the Course

Each user or facility who intends to obtain a lixiscope will need to have a Radiation Safety Officer (RSO) to manage their license, assure compliance with regulations, keep required records, and be the contact to review these items with federal or state inspectors. This person's duties are summarized in Section E (Radiation Safety Program) of this course. Both the RSO and anyone who trains others in lixiscope operations should have a completed understanding of the key elements of this course as follows:

a) Federal and State Regulations
Upon completing this course, the first thing an RSO or trainer should do is obtain the appropriate federal or state radiation protection regulations applicable to his facility. The list of NRC States and Agreement States are detailed in Appendix B.

If you will be operating in only one or more NRC controlled states then you will need to obtain only the federal NRC regulations and and NRC Industrial license application form. If you will be operating in only one Agreement State, then you will only need to obtain that State's Radiation Protection Regulations and State license application form for industrial user. If your use of the lixiscope will involve both NRC and Agreement States, or more than one Agreement State, then you should discuss your specific requirements with your instructor or Lixi, Inc. for assistance.

b) Radiation Safety Instructions to Workers
Anyone who handles lixiscopes under a specific NRC or Agreement State license must receive this training course.

e) Review of LIXI Instruction Manual

The LIXI Instruction Manual is an important part of the personnel training. In Section A of this course, a "once over lightly" reading of the manual was suggested. At this point, a detailed reading of the LIXI Instruction Manual should be done. Any new personnel to be added to your license at a later date must also read these instructions, which should be reviewed annually. People forget specifics with time and carelessness can develop unless periodic emphasis on training is made.

3. Demonstration of the lixiscope

After the LIXI Instruction Manual has been read by each trainee, the trainer should demonstrate:

1) The use of the lixiscope
2) Proper handling and placement of objects in the radiation beam.
3) Describe the major components of the device as shown in the manual.

Each trainee should handle the device and examine test objects under the trainer's supervision.

SECTION C

1. Overview of NRC and Agreement State Regulations

Twenty-one states are directly under NRC radioactive material licensing and regulatory jurisdiction. The rest of the state are under individual state licensing and regulatory jurisdiction. These latter state regulatory agencies are called "Agreement States". They have entered into an agreement with the federal NRC to enforce the radiation protection regulations and licensing systems for their state. Although some of these States have different license application forms and their radiation protection regulation books have different regulation numbering systems, the substance of regulations and licensing is very similiar throughout the United States.

The uniformity in radiation protection regulations allows Lixi, Inc. to use the federal NRC regulations for specifics in this training course. Later, this course will discuss how to obtain the NRC and/or Agreement State regulations pertinent to your intended operations.

If the licensed lixiscope storage and usage facilities are located in only one Agreement State, then that State's regulations and license are needed. If you will be operating in NRC and/or Agreement States, then you will need to obtain the appropriate NRC or Agreement State licenses. The number of licenses needed with multiple lixiscope storage sites depends on how many different jurisdiction are involved. For those trainees who intend to use lixiscopes in several States we recommend discussing your specific needs with Lixi, Inc. Customer Service at (708) 620-4646.

The main items for you to be aware of are:

a) You or your firm needs to obtain a license to use lixiscopes. Lixi, Inc. can help you obtain that license. Lixi, Inc. must have a copy of your materials license before they can ship lixiscopes.

b) Each licensed user must comply with their specific license conditions and the statements in their license application, as well as the applicable federal or state regulations. This course will instruct you on those items and the record systems needed.

4. Summary of NRC Title 10, Part 19 Regulations Pertinent to the lixiscope

"PART 19 NOTICES, INSTRUCTIIONS AND REPORTS TO WORKERS: INSPECTIONS"

19.1 PURPOSE

The reglations in this part establish the requirements for notices, instructions, and reports by licensees to those working on behalf of the licensee. (See Appendix D for complete regulations).

19.2 SCOPE

This regulation applies to all persons who receive, possess, use or transfer licensed materials.

19.3 DEFINITIONS

Of particular importance is the definition of "worker", one who works for the licensee.

Restricted area is defined here and in Part 20.101.

19.11 POSTING OF NOTICES TO WORKERS

Part B is probably the most applicable requirement and is quite simple. Since you will maintain a special file for your license and other documents for the lixiscope, a simple notice as to the location of these documents is sufficient. This is often referred to as the "Instructions to Workers" notice.

Form NRC-3 "Notice to Employees" should be posted at the radiation storage area. This notice is in Appendix B.

19.12 INSTRUCTIONS TO WORKERS

Take particular note of the last sentence. "The extent of these instructions shall be commensurate with radiological health protection problems in the restricted area."

19.14 PRESENCE OF REPRESENTATIVES OF LICENSEE AND WORKERS DURING INSPECTIONS

The commission has the right to inspect your facility, including your records. During such an inspection, the commission inspectors can consult privately with your employees. (This is also covered in 19.15).

5. Summary of NRC Title 10, part 20 Regulations Pertinent to the lixiscope

"PART 20 STANDARDS FOR PROTECTION AGAINST RADIATION"

20.1 PURPOSE

These regulations establish standards for protection against radiation hazards arising out of activities under licenses issued by NRC. The regulations control the possession, use, and transfer of licensed material in such manner that the total dose does not exceed radiation standards.

Persons engaged in activities under an NRC license must make every effort to maintain radiation exposure as low as reasonable achievable "ALARA". (See Appendix E for regulation)

20.2 SCOPE

These regulations apply to all persons who receive, use or transfer materials licensed by the regulations.

20.3 DEFINITIONS

This section should be referred to in order to understand the terminology of the regulations.

To simplify the "key definitions", the Atomic Energy Act of 1954 is administered by the Nuclear Regulatory Commission (NRC).

A license is required to possess and use radioactive materials. The Iodine-125 used in the LIXI source holder (HEAD) is a radioactive material producting gamma radiation. Its use is restricted.

20.4 UNITS OF RADIATION DOSE

The term "Dose" is the quantity of radiation absorbed, per unit of mass by the body or any portion of the body. The "rad" is a measure of the dose of any ionizing radiation to body tissue in terms of the energy absorbed per unit mass of the tissue.

The "rem" is a measure of the dose in terms of its estimated biological effect.

One rad is equal to .869 x 1 roentgen. One millirad is equal to 1/1000 rad.

SECTION B

1. LIXI Training Course

   The NRC required that Lixi, Inc. provide a Training Course to all industrial and veterinary users. After such training was completed and certified, the proposed user could then make an application to the NRC or Agreement State to recieve a license for a lixiscope. Lixi, Inc. must recieve a copy of each user's NRC or state license before Lixi, Inc. can legally deliver a unit to the user.

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   a) Federal and State Regulations
      Upon completing this course, the first thing an RSO or trainer should do is obtain the appropriate federal or state radiation protection regulations applicable to his facility. The list of NRC States and Agreement States are detailed in Appendix B.

      If you will be operating in only one or more NRC controlled states then you will need to obtain only the federal NRC regulations and and NRC Industrial license application form. If you will be operating in only one Agreement State, then you will only need to obtain that State's Radiation Protection Regulations and State license application form for industrial user. If your use of the lixiscope will involve both NRC and Agreement States, or more than one Agreement State, then you should discuss your specific requirements with your instructor or Lixi, Inc. for assistance.

   b) Radiation Safety Instructions to Workers
      Anyone who handles lixiscopes under a specific NRC or Agreement State license must receive this training course.

This course is required whether their name is to be specifically listed on the license or whether they are operating "under the supervision" of a listed user. Generally each person who has received this training should have their name added to the license unless the numbers of such personnel are so large or transient as to make this an unwieldy license condition. Companies with many users may train their own personnel as long as they have proper certified documentation of such training for each individual on file for inspections.

c) Radiation Management Program
There is a sample Radiation Protection Program in Appenix C. This example may need to be changed to fit your individual facility, planned operations, or Agreement State's requirements. Your instructor or Lixi, Inc. is available for consultation on this topic, or to prepare your specific license application to include a management program of this type.

d) Application for License to Possess Iodine-125 in a Lixiscope
The application submitted to the NRC or Agreement State to possess Iodine-125 actually becomes a part of your license. Your applications and amendments should be filed as carefully as your basic license document. Make certain that everyone who handles lixiscopes at your facility has read and understood your license application, corresponding license, and any subsequent amendments. Documented initial reviews and at least annual reviews of these license conditions are highly recommended for all lixiscope users at your facilities. License amendment applications need to be submitted to the licensing agency whenever there is any change in the following:

1) RSO
2) Address
3) Storage or usage area
4) Operating or handling procedures

If there is any doubt on whether an amendment is needed, call licensing agency, Lixi, Inc. or a Health Physicist consultant.

e) Review of LIXI Instruction Manual

The LIXI Instruction Manual is an important part of the personnel training. In Section A of this course, a "once over lightly" reading of the manual was suggested. At this point, a detailed reading of the LIXI Instruction Manual should be done. Any new personnel to be added to your license at a later date must also read these instructions, which should be reviewed annually. People forget specifics with time and carelessness can develop unless periodic emphasis on training is made.

3. <u>Demonstration of the lixiscope</u>

After the LIXI Instruction Manual has been read by each trainee, the trainer should demonstrate:

1) The use of the lixiscope
2) Proper handling and placement of objects in the radiation beam.
3) Describe the major components of the device as shown in the manual.

Each trainee should handle the device and examine test objects under the trainer's supervision.

SECTION C THE REGULATIONS

1. Overview of NRC and Agreement State Regulations
2. NRC and Agreement States
3. How to Obtain NRC, Agreement State and DOT Regulations and Guides
4. Summary of NRC Title 10, Part 19 Regulations Pertinent to the Lixiscope
5. Summary of NRC Title 10, Part 20 Regulations Pertinent to the Lixiscope
6. How to Interpret Regulations and Keep Current
7. The Department of Transportation (DOT) Regulations

SECTION C

1. Overview of NRC and Agreement State Regulations

Twenty-one states are directly under NRC radioactive material licensing and regulatory jurisdiction. The rest of the state are under individual state licensing and regulatory jurisdiction. These latter state regulatory agencies are called "Agreement States". They have entered into an agreement with the federal NRC to enforce the radiation protection regulations and licensing systems for their state. Although some of these States have different license application forms and their radiation protection regulation books have different regulation numbering systems, the substance of regulations and licensing is very similiar throughout the United States.

The uniformity in radiation protection regulations allows Lixi, Inc. to use the federal NRC regulations for specifics in this training course. Later, this course will discuss how to obtain the NRC and/or Agreement State regulations pertinent to your intended operations.

If the licensed lixiscope storage and usage facilities are located in only one Agreement State, then that State's regulations and license are needed. If you will be operating in NRC and/or Agreement States, then you will need to obtain the appropriate NRC or Agreement State licenses. The number of licenses needed with multiple lixiscope storage sites depends on how many different jurisdiction are involved. For those trainees who intend to use lixiscopes in several States we recommend discussing your specific needs with Lixi, Inc. Customer Service at (708) 620-4646.

The main items for you to be aware of are:

a) You or your firm needs to obtain a license to use lixiscopes. Lixi, Inc. can help you obtain that license. Lixi, Inc. must have a copy of your materials license before they can ship lixiscopes.

b) Each licensed user must comply with their specific license conditions and the statements in their license application, as well as the applicable federal or state regulations. This course will instruct you on those items and the record systems needed.

c) State or NRC inspectors will visit your facilities, usually within the first year of operations, to check compliance with license conditions and regulations and the required records. The requirements for lixiscopes are relatively simple and users who have taken this couse should have no problems. If any non-compliance citations are issued by the inspectors, it is generally a matter of writing to the inspection agency to let them know what corrective actions you have taken. Inspection frequencies vary in different States from annual to every 3, 5 or 10 years.

2. NRC and Agreement States

In Appendix B is a list of the twenty-nine individual Agreement States and the NRC regional offices. Examine that list for your own licensing needs to determine which agency(s) has jurisdiction for your lixiscope license(s).

3. How to Obtain NRC, Agreement State and DOT Regulations and Guides

Appendix G contains addresses and sample letters to obtain the NRC Regulations (Title 10) and some of the most used regulatory guides. NRC and DOT regulations are also available at federal Government Bookstores throughout the United States. Costs of federal regulations and publications vary from time to time.

Agreement State radiation protection regulations, notices and forms are generally available at no charge from the addresses and phone numbers listed in Appendix B.

Department of Transportation (DOT) Hazardous Materials Regulations (Title 49 CFR, Parts 100 to 199) are also available from the United States Government Printing Office, (same address as for NRC regulations), or from Government Bookstores. The most important sections of the DOT Regulations pertinent to lixiscopes are Title 49 CFR Parts 170 through 189. It should be noted, however, that if your primary involvement with transportation is the return shipments of lixiscope I-125 source heads to Lixi, Inc. then the lixiscope Shipping Kit instructions (Appendix F) are quite detailed on how to comply with these DOT requirements. For supplemental information about radiation safety, the National Council on Radiation Protection (NCRP) has a number of publications available. The titles and ordering form for those booklets are also in Appendix G. Some of those NCRP booklets may be helpful or interesting to some lixiscope users as additional reference material.

4. Summary of NRC Title 10, Part 19 Regulations Pertinent to the lixiscope

"PART 19 NOTICES, INSTRUCTIIONS AND REPORTS TO WORKERS: INSPECTIONS"

19.1 PURPOSE

The reglations in this part establish the requirements for notices, instructions, and reports by licensees to those working on behalf of the licensee. (See Appendix D for complete regulations).

19.2 SCOPE

This regulation applies to all persons who receive, possess, use or transfer licensed materials.

19.3 DEFINITIONS

Of particular importance is the definition of "worker", one who works for the licensee.

Restricted area is defined here and in Part 20.101.

19.11 POSTING OF NOTICES TO WORKERS

Part B is probably the most applicable requirement and is quite simple. Since you will maintain a special file for your license and other documents for the lixiscope, a simple notice as to the location of these documents is sufficient. This is often referred to as the "Instructions to Workers" notice.

Form NRC-3 "Notice to Employees" should be posted at the radiation storage area. This notice is in Appendix B.

19.12 INSTRUCTIONS TO WORKERS

Take particular note of the last sentence. "The extent of these instructions shall be commensurate with radiological health protection problems in the restricted area."

19.14 PRESENCE OF REPRESENTATIVES OF LICENSEE AND WORKERS DURING INSPECTIONS

The commission has the right to inspect your facility, including your records. During such an inspection, the commission inspectors can consult privately with your employees. (This is also covered in 19.15).

19.30 VIOLATIONS

Any person who willfully violates any provision of the act, or any regulation or order thereunder, may be guilty of a crime and upon convictions, may be punished by fine or imprisonment or both, as provided by law.

5. Summary of NRC Title 10, part 20 Regulations Pertinent to the lixiscope

"PART 20 STANDARDS FOR PROTECTION AGAINST RADIATION"

20.1 PURPOSE

These regulations establish standards for protection against radiation hazards arising out of activities under licenses issued by NRC. The regulations control the possession, use, and transfer of licensed material in such manner that the total dose does not exceed radiation standards.

Persons engaged in activities under an NRC license must make every effort to maintain radiation exposure as low as reasonable achievable "ALARA". (See Appendix E for regulation)

20.2 SCOPE

These regulations apply to all persons who receive, use or transfer materials licensed by the regulations.

20.3 DEFINITIONS

This section should be referred to in order to understand the terminology of the regulations.

To simplify the "key definitions", the Atomic Energy Act of 1954 is administered by the Nuclear Regulatory Commission (NRC).

A license is required to possess and use radioactive materials. The Iodine-125 used in the LIXI source holder (HEAD) is a radioactive material producting gamma radiation. Its use is restricted.

20.4 UNITS OF RADIATION DOSE

The term "Dose" is the quantity of radiation absorbed, per unit of mass by the body or any portion of the body. The "rad" is a measure of the dose of any ionizing radiation to body tissue in terms of the energy absorbed per unit mass of the tissue.

The "rem" is a measure of the dose in terms of its estimated biological effect.

One rad is equal to .869 x 1 roentgen. One millirad is equal to 1/1000 rad.

20.5 UNITS OF RADIOACTIVITY

Radioactivity is measured in terms of disintegrations per unit time (curies). We have covered this subject in the lixiscope material presented earlier. You should read this section and use as a reference.

20.101 RADIATION DOSE STANDARDS FOR INDIVIDUALS IN RESTRICTED AREAS

Our previous discussion of dosage with the lixiscope assures us that it is highly unlikely that a person could receive a dangerous dose of radiation without putting his extremities in the activated beam. However, even the slightest unnecessary radiation exposure is to be avoided.

The lixiscope must be stored in a restricted area, as previously described; that is, in its locked carrying case, with the isotope holder lock secured, and in a secured storage place, with proper identification of the secure area.

20.104 EXPOSURE OF MINORS

The lixiscope must be secured in such manner that prevents any unauthorized access to the device.

20.107 MEDICAL DIAGNOSIS AND THERAPY

Do not construe this part as meaning that you can use the lixiscope for imaging your own extremities or anyone elses.

20.203 CAUTION SIGNS, LABELS, SIGNALS, AND CONTROLS

It is not necessary to display the radiation symbol on your office door or storage cabinet, when they contain only the lixiscope in its carrying case.

Both the LIXI scope and its carrying case are clearly marked with the proper radiation labels. Copies of your license, and latest leak test certificate are required in the carrying case during transportation.

The LIXI scope with Iodine-125 is classified as "Radioactive Material Instrument and Articles UN2910" per 49CFR 173.422, 173.424. It is therefore exempt from labeling and marking when shipped in Type A Container, along with the following statement inside, on, or with the container: "This package conforms to conditions and limitations specified in 49CFR 173.422 for radioactive material, instruments and articles, UN2910."

In Appendix F there is a letter from the U.S. D.O.T. which describes how you may personally transport a Iodine-125 LIXI scope aboard a passenger carrying aircraft.

20.204 EXEMPTIONS

The radiation symbol is not required on the office door, because the radiation level at twelve inches from the surface of the source container is less than five millirem per hour.

CAREFULLY READ BOTH 20.203 AND 20.204

20.205 PROCEDURES FOR PICKING UP, RECEIVING, AND OPENING PACKAGES

The lixiscope is shipped in a Type A container since it does not contain more than 3 curies of Iodine-125.

Upon receipt, it is not necessary for a licensee to monitor the external surface of a package containing a Iodine-125 lixiscope. The lixiscope is exempt per 10 CFR, 20.205 b(1)(1V). However, it is recommended that the user survey each shipment for radiation level at the container surface and for visual damage to the container. The user should maintain a record of these receivals (see Appendix M). If the level of radiation at surface exceeds 0.5 mR/hr for a White I label, or 50mR/hr for a Yellow II label notify Lixi, Inc.

In the event of visual damage:

a) Write on the carriers receipt "Received Damaged"

b) Check external radiation level of container. If below 0.05 mr/hr open container and examine the source holder head on the lixiscope. If any damage is evident perform a leak test as described in Appendix K. Then check to see if the scope is damaged.

c) File a damage claim with the carrier if carrying case and/or lixiscope are damaged.

d) Only if the leak test is positive, notify DOT and appropriate Regulatory Agency.

e) Notify Lixi, Inc. of incident.

The manufacturer has surveyed each package prior to leaving his facility. Follow the Iodine-125 Shipping Instructions for return shipments and safe handling. (See Appendix F)

20.305 DISPOSAL BY RELEASE INTO SANITARY SEWERAGE SYSTEMS

Never attempt to take the isotope holder apart. Disposal is accomplished by return of used Iodine-125 source heads to Lixi, Inc.

20.305 TREATMENT OR DISPOSAL BY INCENERATION

Disposal by inceneration is prohibited.

20.401 RECORDS OF SURVEYS, RADIATION MONITORING, AND DISPOSAL

There are important records which you should retain:

1. Record of receipt with attached note of radiation survey results.
2. Record of in/out accountability of lixiscopes.
3. Re[illegible] of exchange of Iodine-125 source holder [illegible]
4. Leak test certificates. (See Appendix)
5. Any correspondence regarding the failure of a lixiscope to function properly.
6. Copies of your license.
7. Correspondence with the NRC or Agreement State agency.
8. Personnel radiation dosimetry report (if required).

20.402 REPORTS OF THEFT OR LOSS OF LICENSED MATERIAL

You must report the lost or theft of a Iodine-125 source!

Read this carefully and make sure your employees have written instructions for procedures of reporting.

6. How to Interpret Regulations and Keep Current

Many licensed users have some difficulty in reading or interpreting legal jargon of regulations, or knowing where to find applicable parts of regulations. This course attempts to cover these concerns in "Plain English". However, if you receive a "Notice to Licensees" or regulation update from a licensing agency and you do not understand it, you may certainly feel free to call the agency to ask them what it means to you. You may also call Lixi, Inc. or a Health Physic consultant familiar with isotope licensing. It is doubtful that there will be many changes in regulations that will affect lixiscope users. If there would be a major regulation change affecting the lixiscope, Lixi, Inc. would notify all of its customers.

If you have a radioactive material license that is valid in one State and you want to transport to another agency's jurisdiction, you should check with that controlling State or NRC agency on how to obtain "reciprocity Recognition" of your license for limited time periods.

7. Department of Transportation (DOT) Regulations

If you are licensed to transport I-125 "loaded" lixiscopes from one temporary job site to another, it is important that you be familiar with DOT requirements for proper and secure packaging, labeling, contamination procedures, DOT Shipper's Declaration for Dangerous Goods and current leak test certificate that need to accompany the loaded lixiscope. You also need a copy of your radioactive material license that shows you are authorized to transport lixiscopes. These items just described summarize the DOT requirements on this topic. Your instructor or Lixi, Inc. can review examples or more specifics with you if these items are still not clear after you have completed this training course.

EXAM - Circle the correct answer or fill in the blank

A. A radioisotope or radionuclide has the same number of protons and same chemical property as its stable counterpart, but different atomic weights (numbers of neutrons) and an excited nucleus trying to become stable.

a. True

b. False

B. I-125 has a half-life of 60 days and a principle energy of 27 keV.

a. True

b. False

C. Fill in the proper scientific abbreviations for the following different amounts of radioactivity. Example: Picocurie = pCi

a. Curie = ____________

b. Millicurie = ____________

c. Microcurie = ____________

D. Is it possible to ever have a radiation survey meter reading for a given building or geographic area of "less than background?"

a. Yes

b. No

E. Tripling the initial distance away from a radiation source (say from 1 foot to 3 feet) will reduce the radiation exposure rate to 1/9 of the original intensity. This is an example of the inverse square law.

a. True

b. False

F. Exposure rate and dose rate are the same as exposure and dose.

a. True

b. False

G. ALARA is an abbreviation for a radiation safety philosophy to keep exposure as low as reasonably achievable.

a. True

b. False

H. Either an NRC license or an Agreement State license is needed before anyone can receive a lixiscope. Also, the manufacturer, Lixi, Inc., needs a copy of that license before an I-125 source head can be shipped to the licensed user.

a. True

b. False

I. Every user on an industrial radioactive materials license for lixiscopes needs to receive the lixiscope Training Course and have certification of this fact.

a. True

b. False

J. There are federal and/or State radiation protection regulations with which each licensed user must be familiar. These agencies also inspect licensed users for regulatory and license compliance.

a. True

b. False

K. Proper postings of employee notices and appropriate caution labels are important. NRC regulations in 10CFR parts 19 and 20, or equivalent regulations in Agreement States, give details about such requirements.

a. True

b. False

L. The most important sections of Department of Transportation (DOT) regulations, dealing with the shipping or transporting of I-125 source heads, are found in Title 49 Code of Federal Regulations (CFR), Parts 170 through 189.

a. True

b. False

M. Formal "LIXI scope Training Certificates" need to be completed and signed by the trainee and the trainer after this course is completed. These training documents are then usable to apply to the approriate licensing agency to obtain a radioactive materials license for I-125 LIXI scopes.

a. True

b. False

N. A written Radiation Protection (Management) Program is an important part of any new radioactive materials license application. That program should be reviewed with all radiation workers at a facility at least annually.

a. True

b. False

c. Maybe

O. Leak tests on I-125 source heads are required on at least a ___________ frequency. (fill in blank)

P. A facility sketch and individual facility descriptions must accompany each initial license application for radioactive materials.

a. True

b. False

Q. Records of accountability of all incoming and outgoing I-125 source heads are very important, as well as periodic inventories of source heads as required by license conditions.

a. True

b. False

R. The Radiation Safety Officer (RSO) has many responsibilities and should be a person who is diligent in maintaining or supervising continuing, complete and current records as required by regulations and license conditions. This person also needs to be readily available for daily operations and for inspections by regulatory agencies.

a. True

b. False

S. The most current leak test certificate and license copy needs to accompany any LIXI scope being taken to temporary job sites (if this transportation is permitted by license conditions).

a. True

b. False

T. "Year at a Glance" manageme[illegible]les o[illegible]s at least annual self-audits and radiation sa[illegible]g and regulations, are excellent ways to mai[illegible] be prepared for inspections.

a. True
b. False

U. If you start with an I-125 source of 400 mCi activitiy, how much activity is left in that source after 240 days?

a. 100 mCi

b. 50 mCi

c. 50 uCi

d. 25 uCi

e. 25 mCi

V. If you get a sealed source isotope capsule wet by allowing water or blood to seep into the holder head, no corrosion to the capsule or radioactive material leak will occur.

a. True

b. False

W. A lixiscope with source holder head should not be sterilized by any method including autoclave.

a. True

b. False

Trainee Name: ______________________

Name of Firm: ______________________

Date: ______________________

CERTIFICATE OF TRAINING
RADIATION SAFETY

This is to certify that BRUCE R. BALLARD

has completed the LIXI™ Radiation Training Course on file with the Illinois Department of Nuclear Safety.

This training was completed on: 12 JUNE 1997

This training course was developed by Lixi, Inc. and Stan A. Huber Consultants Inc. for the purpose of providing the necessary training in radiation safety and experience for LIXI™ Imaging Scope users. The training was given as approved by the Illinois Department of Nuclear Safety under License Numbers IL-01013-01 and IL-01339-01.

This also certifies that the trainee has personally operated a working LIXI™ Imaging Scope, under supervision, in the aforementioned course.

A copy of this certificate is to be provided to the NRC or Agreement State as proof that the trainee has the necessary experience to make a specific application for a Byproduct Material License to possess and use a LIXI™ Imaging Scope.

This document was prepared in conformity with 32 Illinois Administrative Code, and all information contained herein is true and correct to the best of our knowledge and belief.

Certified by: LIXI, INC.

Instructor: ROBERT L. KELLY

Signature: Robert L Kelly

Under License No.: IL-01339-01

Date: 12 JUNE 1997

New Certificate Revised 7/1/89

LIXI

INSTRUCTOR CERTIFICATE

LIXI RADIATION SAFETY TRAINING COURSE

This is to certify that *Bruce R. Ballard* has completed the basic requirements of an instructor's rating for the LIXI Radiation Safety Training Course. The instructor has successfully completed all the requirements established by Lixi, Inc. for teaching the LIXI Imaging Scope training course. The instructor has also completed the basic course on uses and applications of the LIXI Imaging Scope and how to demonstrate it. This certificate qualifies the instructor named above to teach the LIXI Radiation Safety Training Course as approved on Illinois License No.'s IL-01013-01 and IL-10339-01 (Lixi's License Number).

CERTIFIED BY LIXI, INC.

UNDER LICENSE NO. IL-10339-01

DATE: June 19, 1997

SIGNATURE: [signature]

NAME: Robert J. Savini

TITLE: Executive Vice President

Lixi, Inc. • 1438 Brook Drive • Downers Grove, Illinois 60515 U.S.A.
Telephone (630) 620-4646 • Fax (630) 620-7776 • EMAIL Address lixi@lixi.com

Ms 16
P-8

CONSOLIDATED
NDE, INC.

June 06, 1997

Judith A. Joustra
Division of Nuclear Materials Safety
US Nuclear Regulatory, Region 1
475 Allendale Rd
King of Prussia, PA 19406-1415

Subject: License Amendment

Reference: License No. 29-21452-02
Docket No. 030-43195
Mail Control No. 124575

Dear Ms. Joustra:

This is in response to your letter dated May 27, 1997.

1. Consolidated NDE, Inc., requests the ability to provide the initial training of operators, as a condition of the license amendment. The initial training will only be provided to persons that are employed by CNDE and have been designated as an industrial gamma radiographer, under NRC Materials License 29-21452-01. The manufacturer of the device will provide the initial training to any individual that will be designated by CNDE as an instructor and any individual that will perform exchanges of the source.

2. The primary location where the device shall be used will be at temporary job-sites, but it may, on occasion, be used at the CNDE facility at 6 Woodbridge Avenue - Woodbridge, NJ.

3. The device shall be placed in the manufacturers storage/shipping container and the container shall be locked. The surface of the storage/shipping container is an unrestricted area, and it shall be stored in one of two locations.

   A. In a below ground pit, that is accessible via a stairway. *(diagram enclosed)*

   B. In the permanent installation, licensed for Ir-192 radiography. *(diagram enclosed)*

OFFICIAL RECORD COPY ML 10

6 Woodbridge Avenue, P.O. Box 593 Woodbridge, NJ 07095
Tel: 908-636-4550 Fax: 908-636-5845
Branch Offices:
Atlanta, GA Charlotte, NC Clarksburg, WV East Hampton, CT

124575
JUN - 5 1997

CONSOLIDATED
NDE INC.

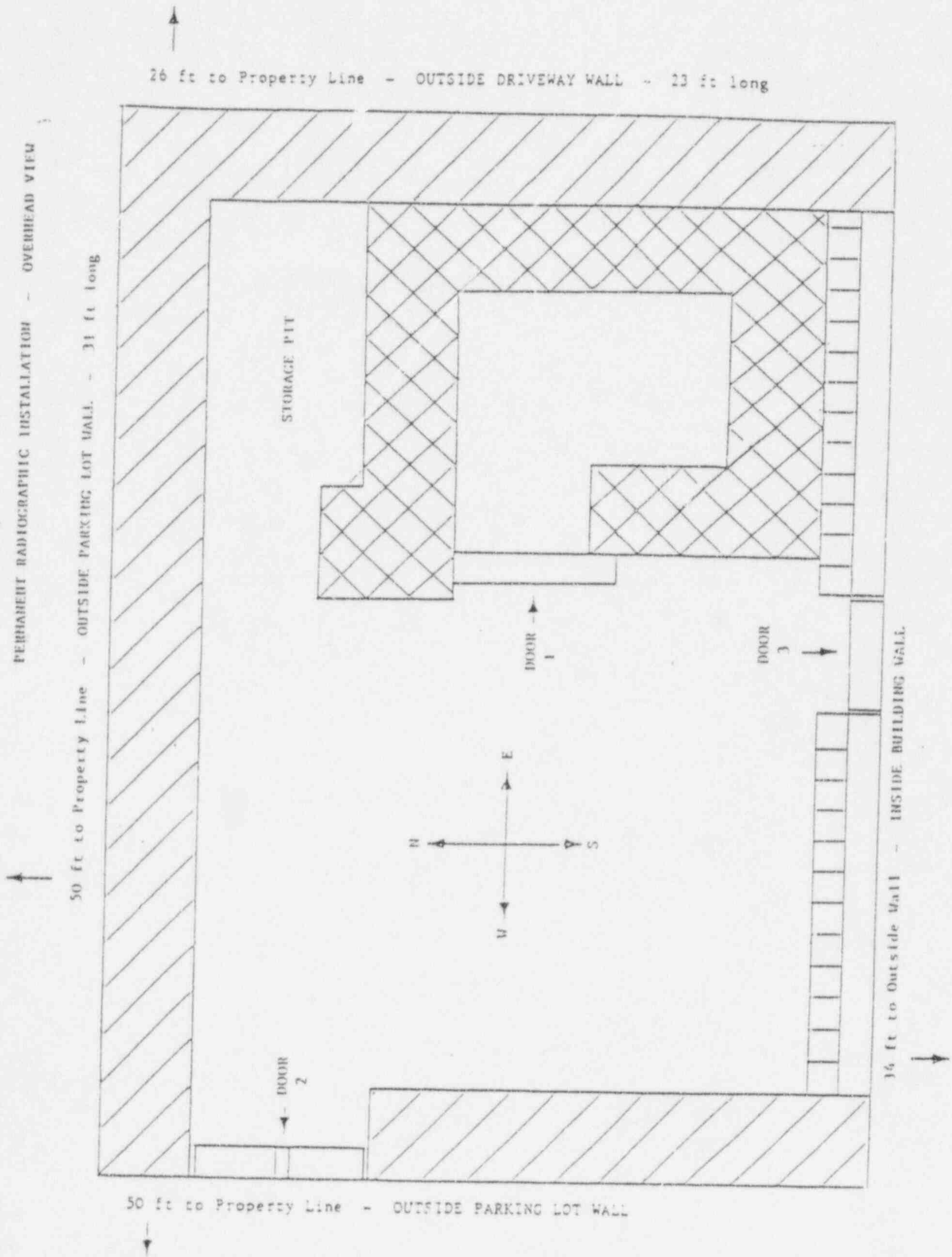
3. The device is used primarily to inspect insulated steel pipe and uninsulated plastic tubing, and associated fittings and joints. However, the industrial application could extend to any number of composite items of mixed densities.

   The device shall never be used on humans and a copy of page 09 of 12 of the operating procedures manual is enclosed as confirmation.

Respectfully Submitted,

Bruce R. Ballard
RSO

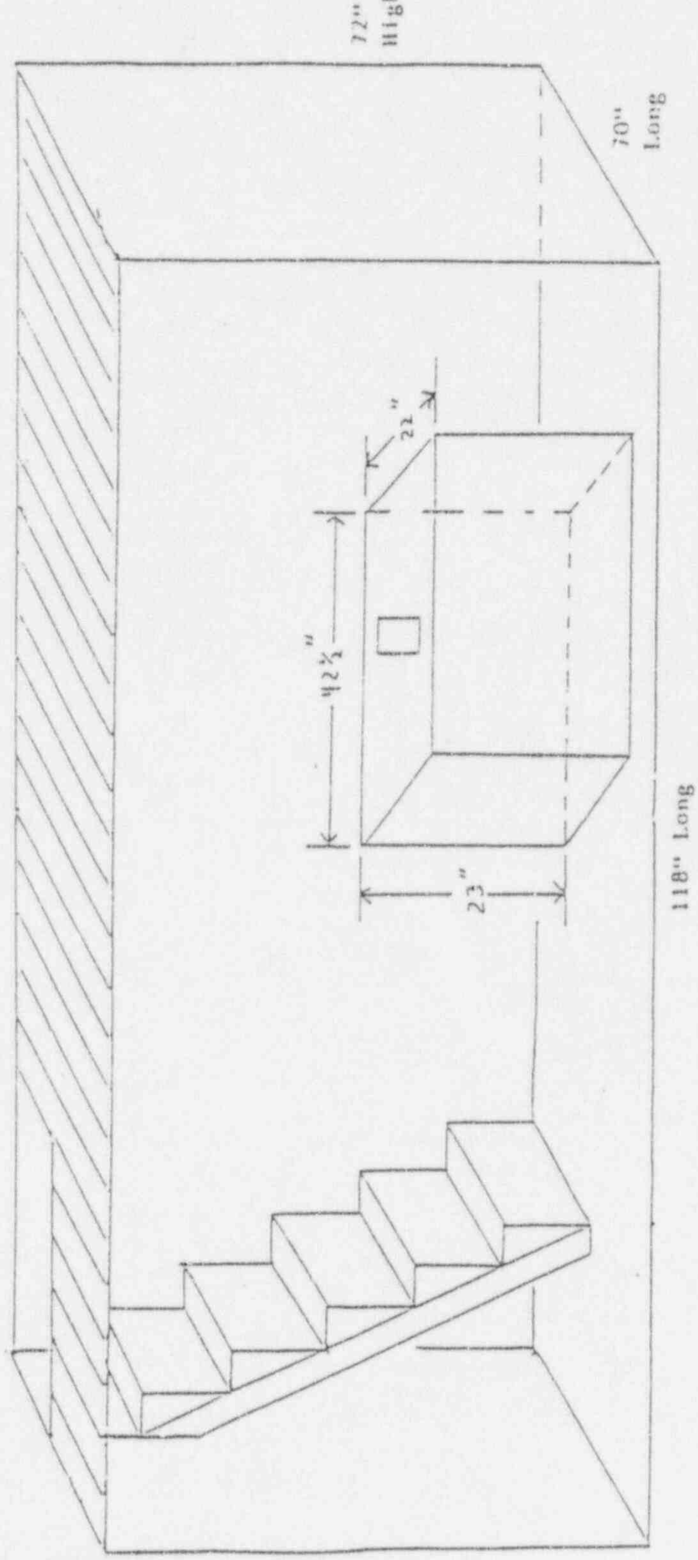
enc: As stated


26 ft to Property Line - OUTSIDE DRIVEWAY WALL - 23 ft long
PERMANENT RADIOGRAPHIC INSTALLATION - OVERHEAD VIEW
50 ft to Property Line - OUTSIDE PARKING LOT WALL - 31 ft long
STORAGE PIT
DOOR 1
DOOR 3
DOOR 2
N
S
E
W
34 ft to Outside Wall - INSIDE BUILDING WALL
50 ft to Property Line - OUTSIDE PARKING LOT WALL

CONSOLIDATED NDE, INC
6 WOODBRIDGE AVENUE
WOODBRIDGE, NJ 07095

STORAGE AREA 3 - Trunk in Storage Pit

Entire Storage Pit is Below Ground Level



11.0 OPERATIONS

11.1 GENERAL REQUIREMENTS

A. Operations shall be conducted to maintain radiation exposures - **A L A R A.**

11.2 PRE-JOB EQUIPMENT CHECK

A. The operator shall verify all items on the pre-job check list are accounted for.

1. Operating & Emergency Procedures
2. Utilization Log
3. Leak Test Results
4. Survey Instrument

11.3 SET-UP

11.3.1 Communication

A. The appropriate customer and/or contractor personnel shall be informed or aware that fluoroscope operations are to be performed.

11.3.2 Initial Survey

A. Open the storage case and survey the source head to confirm the source is shielded. Surface dose rates on the source holder head a <0.1 mR/hr (<1 uSv/hr) when the source is in the shielded position.

B. Unlock the security padlock and remove the padlock from the source head. The lock prevents the unauthorized use of the device.

C. Remove the device from the storage/shipping container.

11.4 EXPOSING THE SOURCE

11.4.1 Area Check

A. Verify no unauthorized personnel are near the detection area.

11.4.2 Operating the Gauge

** SAFETY WARNING ***

A. Never insert any fingers, hands or other extremities into the radiation beam. The device is only for industrial applications and is never to be used on humans.

B. Push down on the control handle, located on the top of the source holder head and rotate 90° until the indicator on the handle aligns with stop position marked "ON". The handle will only rotate in one direction to turn "ON", which is counterclockwise when viewed from above.

C. Place the object to be examined in the open space between the scintillator cover and the source holder. Small objects must be handled with forceps or other remote holding devices to avoid exposing the fingers in the collimated radiation beam.

D. When viewing is complete, rotate the control handle 90o in a clockwise direction tot he "OFF" position.

E. Survey the source head to confirm the source is shielded. Surface dose rates on the source holder head a less than 0.1 mR/hr (<1 uSv/hr) when the source is in the shielded position.

MAY 27 1997

License No. 29-21452-02
Docket No. 030-34195
Control No. 124575

Mr. Bruce Ballard
Radiation Safety Officer
Consolidated NDE, Inc.
6 Woodbridge Avenue
Woodbridge, New Jersey 07095

Dear Mr. Ballard:

This is in reference to your letter dated May 15, 1997 requesting to amend Nuclear Regulatory Commission License No. 29-21452-02. In order to continue our review, we need the following additional information:

1. Confirm that the manufacturer of the device will provide initial training to all users of the device. In additon, confirm that the individual who will perform exchanges of the source assembly will be training by the manufacturer to perform this procedure.

2. Confirm whether the device will be used at your facility at 6 Woodbridge Avenue and temporary job sites.

3. Please submit a diagram/description of the storage location for the Amersham source and device.

4. Please identify specifically what the device will be used for. In addition, submit a copy of your procedure/instructions which restrict the use of the Amersham device to industrial applications and prohibit the use of the device on humans.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I Office and refer to Mail Control No. 124575. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5355.

If we do not receive a reply from you within 30 calendar days from the date of this letter, we shall assume that you do not wish to pursue your application.

Sincerely,

ORIGINAL SIGNED BY:
JUDITH A. JOUSTRA

Judith A. Joustra
Division of Nuclear Materials Safety

License No. 29-21452-02
Docket No. 030-34195
Control No. 124575

DOCUMENT NAME: R:\WPS\DLTR\L2921452.02

To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DNMS/RI	N	DNMS/RI					
NAME	JJoustra JAJ							
DATE	05/23/97		05/ /97		05/ /97		05/ /97	

OFFICIAL RECORD COPY

030-34195

CONSOLIDATED
NDE, INC.

May 15, 1997

Regional Administrator
Nuclear Materials Safety Branch
US Nuclear Regulatory, Region 1
475 Allendale Rd
King of Prussia, PA 19406-1415

Subject: License Amendment

Reference: License Number 29-21452-02

Dear Sir or Madam:

Please amend Consolidated NDE, Inc., material license 29-21452-02 to include the following source and device, manufactured by Amersham Corporation - 40 North Avenue / Burlington, MA 01803.

Nuclide	Form	Activity	Model	Authorized Use	Registry Number	Registry Jurisdiction
Gadolnium-153	Sealed Source	1000 mCi	TG Series	Amersham Model LS-82	GDC.CY1	USNRC

The TG Series are sources that are individually housed in a stainless steel insert and sealed into a welded titanium capsule. The TG Series include the models TG42, TG62, TG132, TG182 & TG242.

The source is part of a hand held and portable fluoroscope, used for low intensity, real time x-ray imaging. The different source assembly models correspond to different models of the LS-82 scope, that have varying source to screen distances. The different source assemblies are unique and are not interchangeable with different model scope units.

The application and operating characteristics of the LS-82 device is virtually identical to that of the portable nuclear gauges already listed on the referenced license. The only significant difference is source has a shielded and an unshielded position on the unit. This difference actually makes the LS-82 device safer to operate.

6 Woodbridge Avenue Woodbridge, NJ 07095
908-636-4550 fax 908-636-5845
Branch Offices:
Atlanta, GA Charlotte, NC Clarksburg, WV East Hampton, CT

124575
MAY 16 1997

CONSOLIDATED
NDE INC.

US NRC
05/15/97

All conditions that relate to the possession and use of the nuclear gauges in the existing license conditions shall be followed. Specifically in the following areas:

A. Operating and Emergency Procedures

a. personnel monitoring
b. limits for radiation exposure
c. inspection check and maintenance
d. quarterly inventory and leak testing
e. storage and transportation
f. emergency procedures

A. Administrative Procedures

a. operator training
b. safety examinations
c. instructor qualifications
d. refresher training
c. annual audits

The manufacturers operating procedures shall be followed and operators shall be issued an abridged copy when using the device. Other operating conditions include:

1. the device shall be surveyed to assure the source is in the shielded or "off" position when it is removed from or placed into storage, and when not in actual use.

2. due to the source activity and collimation, the immediate area around the device is unrestricted and does not require posting.

3. the source is replaced by exchanging the source head assembly.

Enclosed is CNDE check #12503 in the amount of $300.00 for the amendment fee.

Respectfully Submitted,

Bruce R. Ballard
RSO

enc: As stated

124575

FedEx. USA Airbill Tracking Number 4240849513 **Sender's Copy**

1410396 00171/00250

1 From (please print)

Date 5/15/97 Sender's FedEx Account Number 0071-0451-0

Sender's Name Bruce Ballard Phone (908) 636-4550

Dept./Floor/Suite/Room

Company CONSOLIDATED N D E INC

Address 6 WOODBRIDGE AVE

City WOODBRIDGE State NJ Zip 07095

2 Your Internal Billing Reference Information (Optional) (First 24 characters will appear on invoice)

3 To (please print)

Recipient's Name Regional Administrator Phone (610) 337-5000

Dept./Floor/Suite/Room

Company US NRC, Region 1 / Nuclear Materials Safety Branch

Address 475 Allendale Road

(To "HOLD" at FedEx location, print FedEx address here) (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes)

City King of Prussia State PA Zip 19406

For HOLD at FedEx Location check here

☐ Hold Weekday (Not available with FedEx First Overnight)

☐ Hold Saturday (Not available at all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

For Saturday Delivery check here

☐ (Extra Charge. Not available to all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

4a Express Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas

☑ FedEx Priority Overnight (Next business morning)

☐ FedEx Standard Overnight (Next business afternoon)

☐ FedEx 2Day* (Second business day)

☐ NEW FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)

*FedEx Letter Rate not available. Minimum charge: One pound FedEx 2Day rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas

☐ FedEx Overnight Freight (Next business day service for any distance)

☐ FedEx 2Day Freight (Second business day service for any distance)

☐ FedEx Express Saver Freight (Up to 3 business day service based upon distance)

(Call for delivery schedule. See back for detailed descriptions of freight products.)

5 Packaging ☑ FedEx Letter (Declared value limit $500) ☐ FedEx Pak ☐ FedEx Box ☐ FedEx Tube ☐ Other Pkg.

6 Special Handling

Does this shipment contain dangerous goods? ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)

☐ Dry Ice (Dry Ice, 9, UN 1845 III ___ x ___ kg. 904) (Dangerous Goods Shipper's Declaration not required)

CA ☐ Cargo Aircraft Only

7 Payment

Bill to: ☑ Sender (Account no. in section 1 will be billed) ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

(Enter FedEx account no. or Credit Card no. below)

FedEx Account No.

Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value*	Total Charges
		$ .00	$

*When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

8 Release Signature Sign to authorize delivery without obtaining signature.

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

272

Service Conditions, Declared Value, and Limit of Liability – By using this Airbill you agree to the service conditions in our current Service Guide or U.S. Government Service Guide. Both are available on request. SEE BACK OF SENDER'S COPY OF THIS AIRBILL FOR INFORMATION AND ADDITIONAL TERMS. We will not be responsible for any claim in excess of $100 per package whether the result of loss, damage, or delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, and document your actual loss in a timely manner. Your right to recover from us for any loss includes intrinsic value of the package, loss of sales, interest, profit, attorney's fees, costs, and other forms of damage, whether direct, incidental, consequential, or special, and is limited to the greater of $100 or the declared value but cannot exceed actual documented loss. The maximum declared value for any FedEx Letter and FedEx Pak is $500. Federal Express may, upon your request, and with some limitations, refund all transportation charges paid. **See the FedEx Service Guide for further details.**

Questions?
Call 1·800·Go·FedEx (1-800-463-3339)

The World On Time

Terms And Conditions

Definitions On this airbill, we, our and us refer to Federal Express Corporation, its employees, and agents. You and your refer to the sender, its employees, and agents.

Agreement To Terms By giving us your package to deliver, you agree to all the terms in our current Service Guide, which is available on request. You also agree to those terms on behalf of any third party with an interest in the package. If there is a conflict between the Service Guide and this Airbill, the Service Guide will control. No one is authorized to change the terms of our Agreement.

Responsibility For Packaging And Completing Airbill You are responsible for adequately packaging your goods and properly filling out this airbill. If you omit the number of packages and/or weight per package, our billing will be based on our best estimate of the number of packages we received and/or an estimated "default" weight per package as determined by us.

Responsibility For Payment Even if you give us different payment instructions, you will always be primarily responsible for all delivery costs, as well as any cost we incur in either returning your package to you or warehousing it pending disposition.

Limitations On Our Liability And Liabilities Not Assumed

- Our liability for loss or damage to your package is limited to your actual damages or $100, unless you declare a higher value, pay an additional charge, and document your actual loss in a timely manner. You may pay an additional charge for each additional $100 of declared value. The declared value does not constitute, nor do we provide cargo liability insurance.
- In any event, we will not be liable for any damage, whether direct, incidental, special, or consequential in excess of the declared value of a shipment, whether or not Federal Express had knowledge that such damages might be incurred including but not limited to loss of income or profits.
- We won't be liable:
  - for your acts or omissions, including but not limited to improper or insufficient packing, securing, marking, or addressing, or those of the recipient or anyone else with an interest in the package.
  - if you or the recipient violate any of the terms of our Agreement.
  - for loss or damage to shipments of prohibited items.
  - for loss, damage, or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, acts of public enemies, war, strikes, civil commotions, or acts of public authorities with actual or apparent authority.

Declared Value Limits

- The highest declared value allowed for FedEx Letter and FedEx Pak shipments is $500.
- For other shipments, the highest declared value allowed is $50,000 unless your package contains items of "extraordinary value," in which case the highest declared value allowed is $500.
- Items of "extraordinary value" include shipments containing such items as artwork, jewelry, furs, precious metals, negotiable instruments, and other items listed in our Service Guide.
- You may send more than one package on this airbill and fill in the total declared value for all packages, not to exceed the $100, $500 or $50,000 per package limit described above. (Example: 5 packages can have a total declared value of up to $250,000.) In that case, our liability is limited to the actual value of the package(s) lost or damaged, but may not exceed the maximum allowable declared value(s) or the total declared value, whichever is less. You are responsible for proving the actual loss or damage.

Filing A Claim YOU MUST MAKE ALL CLAIMS IN WRITING and notify us of your claim within strict time limits set out in the current Service Guide.

We'll consider your claim filed if you notify our Customer Service Department at 1•800•Go•FedEx and make your claim in writing as soon as possible.

Within 90 days after you notify us of your claim, you must send us all the information you have about it. We aren't obligated to act on any claim until you have paid all transportation charges, and you may not deduct the amount of your claim from those charges.

If the recipient accepts your package without noting any damage on the delivery record, we will assume the package was delivered in good condition. For us to process your claim, you must make the original shipping cartons and packing available for inspection.

Right To Inspect We may at our option open and inspect your packages before or after you give them to us to deliver.

Right Of Rejection We reserve the right to reject a shipment when such shipment would be likely to cause delay or damage to other shipments, equipment, or personnel or if its shipment is prohibited by law, or if the shipment would violate any terms of our Agreement or our current Service Guide.

C.O.D. Services C.O.D. SERVICE IS NOT AVAILABLE WITH THIS AIRBILL. If C.O.D. Service is required, please use a Federal Express C.O.D. airbill.

Air Transportation Tax Included Our basic rate includes a federal tax required by Internal Revenue Code Section 4271 on the air transportation portion of this service.

Money-Back Guarantee In the event of untimely delivery, Federal Express will at your request and with some limitations, refund or credit all transportation charges. See current Service Guide for more information.

Freight Services There are several freight service options depending on your transit time needs.

- **FedEx Overnight Freight** Next business day service to all points in the 48 states, rates are uniform regardless of distance shipped.
- **FedEx 2Day Freight** Second business-day service to all points in the 48 states, rates are uniform regardless of distance shipped.
- **FedEx Express Saver Freight** Up to 3 business-day service to all points in the 48 states, rates are based upon the distance shipped.

(FOR LFMS USE)
INFORMATION FROM LTS

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

Program Code: 03121
Status Code: 0
Fee Category: 3P
Exp. Date: 20010831
Fee Comments: ____________________
Decom Fin Assur Reqd: N

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED
   Applicant/Licensee: CONSOLIDATED NDE, INC.
   Received Date: 970516
   Docket No: 3034195
   Control No.: 124575
   License No.: 29-21452-02
   Action Type: Amendment

2. FEE ATTACHED
   Amount: $300.00
   Check No.: # 12503

3. COMMENTS

Signed Brown R. J.
Date 5/20/97

1997 MAY 28 PM 3:53

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered ✓)

1. Fee Category and Amount: 3P $300

2. Correct Fee Paid. Application may be processed for:
   Amendment ✓
   Renewal ______
   License ______

3. OTHER ______________________________

Signed SC
Date 6/3/97

Log May 10 I
Remitter
Check No. 12503
Amount $300
Fee Category 3P
Type of Fee AmD
Date Check Rec'd 5/28/97
Date Completed 6/3/97
By SC