

Additional Sheet -

Item 10 - Radiation Safety Program

Tisco, Inc.  
3429 South Mable  
Oklahoma City, OK 73129

RADIATION SAFETY PROCEDURES MANUAL

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REG4 LIC30  
35-23191-01 PDR

Prepared By:

Allen J. Kindrick  
International Pipe Inspectors Association  
4101 Oates Road  
Houston, Texas 77013

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Rev July 5, 1985

Tisco, Inc.

GENERAL COMMENT:

Wherever this manual refers to the Commission, that reference specifically means:

U.S. Nuclear Regulatory Commission and its authorized representatives.

This manual outlines the procedures pertaining to the use and handling of radioactive sources. It is the intent of Tisco, Inc. to comply in every way possible with State and Federal Regulations for control of radiation. The objectives of these procedures are to:

- o minimize safety problems
- o minimize hazards to employees and the general public
- o prevent radiation incidents.

Although the devices operated emit very low levels of radiation, every effort will be made to provide procedures and practices that will maintain dose levels to individuals as low as is reasonably achievable.

A copy of these procedures will be given to each Authorized User (Inspection Unit Operator). It is the responsibility of each Authorized User to have a working knowledge of these procedures.

## RADIATION SAFETY PROCEDURES

### I. RESPONSIBILITY OF THE RADIATION PROTECTION OFFICER.

- A. The Radiation Protection Officer (RPO) is responsible for management of the entire radiation program. Specific duties include:
1. Assuring that byproduct materials possessed under the license conform to the materials listed on the license.
  2. Assuring that use of the devices, particularly in the field, is only by individuals designated as Authorized Users in personnel records after completing the prescribed training.
  3. Assuring that the source holders are properly secured against unauthorized removal at all times when they are not in use.
  4. Assuring that proper authorities (NRC, local police, State officials, etc.) are notified promptly in case of accident or radiation incident. To serve as a point of contact and give assistance in case of emergency (gauge damage in the field, fire, theft, etc.)
  5. Assuring that the terms and conditions of the license, such as periodic leak tests, are met and that the required records are in compliance with NRC regulations and license conditions.
  6. Ensuring compliance with DOT regulations during transit of any inspection unit containing a radioactive source.
- B. The RPO is committed to make every effort to comply with state and federal regulations and to report to the Commission any incident, theft, or loss of radioactive material.

### II. RECORDS

- A. Records of the following events will be kept in the radiation file:
1. Receipts, transfers, and disposals of all radioactive material
  2. Results of all radiation surveys.
  3. Calibration reports of survey meters.
  4. Source leak/wipe test evaluation reports.
  7. Documentation of training and qualification for Authorized Users (Operators).

### III. TRAINING AND QUALIFICATION OF PERSONNEL

- A. Each Authorized User (Operator) will receive formal training through the International Pipe Inspectors Association's Radiation Safety School. Also, each Individual User will receive a copy of these procedures and have sufficient training to ensure a working knowledge.
- B. Each Individual User (Operator) must have received on-the-job training in operation and record keeping to ensure proficiency.

### IV. RADIATION MONITORING

#### A. Personnel Monitoring.

Due to the very low radiation levels, and as stated by the Texas Department of Health, the licensing agency for the manufacturer, no personnel monitoring is required for users of the Wm. G. Wilson Mfg Co. Wilsalog 5000 containing a model 2202 spinning gauge.

#### B. Surveys.

1. Although no maintenance on the sealed source or the source holder will be done by the licensee, a survey meter is to be kept on each of the mobile inspection units. During transit the meter will be carried in the vehicle drivers compartment.
2. The radiation survey meters are G. E. Smith & Associates Model GS-500A. These survey instruments are sensitive from 0.01 mR/hr to 500 mR/hr.
3. Each survey instrument is to be calibrated semi-annually and after any repairs. Calibration shall be done by Gulf Nuclear or Nuclear Sources and Services, Inc. (NSSI), or other specifically licensed firm.
4. Area surveys shall be taken at the beginning of each inspection service at a remote site before commencing the job and at completion of the job before leaving the area.
5. Source holder profile shall be taken when a source is received or transferred and recorded on the Radiation Profile Form.

#### C. Leak/Wipe Tests and Equipment Check.

1. A leak/wipe test and an equipment check on the source holder is to be performed by the Radiation Safety Officer at intervals not greater than six months. Only the source holder will be wiped. The lead seals permitting access to the source will not be broken for a leak/wipe test.

2. Leak/wipe tests are performed following the instructions on the kit supplied by NSSI, Gulf Nuclear, or other specifically licensed firm.

## V. STORING, MONITORING, AND TRANSPORTING RADIOACTIVE MATERIAL

### A. Storing.

1. When not in use, the source holder (camera) will have the OPEN/SHUT slide locked in the SHUT position. Also, when the inspection unit is not in use, the doors providing access to the source holder will be locked.
2. At temporary job sites, the unit will not be left unattended unless the source holder is locked shut, the cover locked, and all access doors to the unit locked.
3. When not inspecting pipe at a temporary job site, each inspection unit will be parked at the permanent facilities inside the fenced compound with the unit locked.

### B. Monitoring.

1. Each source holder will be posted with decals as stated in the users manual. These decals shall not be removed and will be replaced when they become defaced or illegible.
2. Each inspection unit will be surveyed at the beginning and end of each inspection service and at least monthly if the unit is in service. If radiation levels at a distance of 1 foot from the source holder exceed 5 millirems per hour, the unit shall not be used until released by the RSO.
3. A dose rate radiation profile survey will be made  
a. when a source holder is initially received  
b. when a source holder is transferred to another licensee
4. A record of each survey will be kept in the radiation file.

### C. Transporting.

1. Prior to transit each inspection unit will be checked to see that the source holder slide is locked in the shut position and the rotating head is pinned so that it cannot rotate.
2. The driver of the unit must observe all DOT regulations and have a completed SHIPPER'S CERTIFICATE FOR RADIOACTIVE MATERIALS FOR PUBLIC CARRIER SHIPMENTS. This completed certificate must be carried in the drivers compartment within reach of the driver when restrained by safety belts.

## VI. REPAIRS

- A. No repairs will be made to the source, source holder, or shielding. Any repairs or maintenance will be performed by the manufacturer or other specifically licensed firm.
- B. Mechanical repairs to the gauge, other than the source, source holder, or shielding, may be done by RPO or Authorized Users. The OPEN/SHUT slide must be in the SHUT position when making mechanical adjustments or repairs.

## VII. EMERGENCY PROCEDURES

- A. In the event of an emergency arising from malfunction of source holder, or mechanical damage to the spinning pipe gauge that could affect radiation emissions:
  1. The area must be surveyed immediately. If radiation levels are more than 2 millirems per hour at any distance greater than three feet from the source holder, warning signs and barriers must be placed at the 2-millirem perimeter or a distance of 60 feet from the source holder.
  2. Notify the RPO - Phone 405/677-0585 or 405/381-3643.
  3. All reports to the Commission will be made by the RPO.
- B. In the event of fire:
  1. Notify all personnel in the area immediately.
  2. Attempt to put out the fire if a radiation hazard is not immediately present.
  3. Notify fire department if it appears the fire cannot be handled by personnel on hand.
  4. Notify RPO. Phone 405/677-0585 or 405/381-3643.
  5. Monitor the area immediately after the fire is extinguished.
  6. All necessary reports to the Commission will be made by the RPO.

# APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: GET THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

## FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS  
WASHINGTON, DC 20545

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
NUCLEAR MATERIAL SECTION  
831 PARK AVENUE  
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
MATERIAL RADIATION PROTECTION SECTION  
301 MARSHALL STREET, SUITE 2000  
ATLANTA, GA 30303

## IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
MATERIALS LICENSING SECTION  
799 ROOSEVELT ROAD  
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
MATERIAL RADIATION PROTECTION SECTION  
611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V  
MATERIAL RADIATION PROTECTION SECTION  
1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR (Check appropriate item):

- ☒ A. NEW LICENSE  
☐ B. AMENDMENT TO LICENSE NUMBER \_\_\_\_\_  
☐ C. RENEWAL OF LICENSE NUMBER \_\_\_\_\_

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code):

11500, Inc.  
3420 South Mable  
Oklahoma City, OK 73129

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED:

3420 South Mable  
Oklahoma City, Oklahoma  
and at temporary job sites throughout the State of Oklahoma

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION:

Clinton DeLong

TELEPHONE NUMBER:

405-677-0585

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 X 11 PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL:

a. Element, isotope, nuclide, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED:

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE:

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTLY NEAR THE AREA:

9. FACILITIES AND EQUIPMENT:

10. RADIATION SAFETY PROGRAM:

11. WASTE MANAGEMENT:

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31):

FEE CATEGORY: 51 AMOUNT: \$ 254,100

13. CERTIFICATION: (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: UNDER SECTION 1001 OF THE ACT OF JUNE 25, 1948 (62 STAT. 749) MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

SUBSCRIBER: Mark K. Walker

TYPED/PRINTED NAME:

Mark K. Walker

TITLE:

Vice President

DATE:

## 14. VOLUNTARY ECONOMIC DATA

a. ANNUAL REVENUE:

\$10K	\$1M - 5M
\$250K - 500K	\$5M - 10M
\$500K - 750K	\$10M - 25M
\$750K - 1M	

b. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors):

c. NUMBER OF BIDS:

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Do not include information on the economic impact of current NRC regulations or the effect of proposed NRC regulations that may affect your 1996 operations permit, if to protect confidential commercial or financial, proprietary, information disclosed to the agency in confidence)?

YES

NO

## FOR NRC USE ONLY

FILE NO.:

FILE NO.:

FEE CATEGORY:

COMMENTS:

APPROVED BY:

AMOUNT RECEIVED:

CHECK NUMBER:

DATE:



SHIPPER'S CERTIFICATION FOR RADIOACTIVE MATERIALS  
FOR PUBLIC CARRIER SHIPMENTS  
(Motor vehicle or water transport)

DESCRIPTION AND

PROPER SHIPPING NAME: Radioactive Material Special Form NOS  
NA9182. Quantity 1.5 Curies.

RADIONUCLIDE: Cesium 137  
PHYSICAL FORM: Ceramic Microspheres  
ACTIVITY: 1500 millicuries

TRANSPORT GROUP: Special Form  
Note: Source Capsule IAEA Identification  
and Marking is "3M Model 4F6S"

CATEGORY OF LABEL: Radioactive Yellow-II  
QUANTITY: Type A Quantity

PACKAGING: Type A      Note:  
This shipment contains packages of Type A  
radioactive materials limited in accordance  
with the 1973 IAEA Regulations, pursuant to  
the provisions of 49 CFR 171.12(e).

PACKAGE SPECIFICATIONS: Specification 7A, general packaging, Type A  
PACKAGE MARKING: USA DOT 7A TYPE A

TRANSPORTATION INDEX: \_\_\_\_\_  
VEHICLE PLACARDING  
REQUIREMENTS: None

ATTACHMENTS: Special Form Certificate of Competent  
Authority.

This is to certify that the above named materials are properly  
classified, described, packaged, marked and labeled, and are in  
proper condition for transportation according to the applicable  
regulations of the Department of Transportation.

EXPORT AUTHORITY: 10 CFR 110.24

Name and Address of Shipper

Tisco, Inc.  
3420 South Marble  
Oklahoma City, OK 73129

Name and title of person  
signing Certification

Signature of the Shipper

Date \_\_\_\_\_

\_\_\_\_\_

For each source holder shipped, one completed and signed certificate  
shall be handed to the carrier.

Item 5. RADIOACTIVE MATERIAL

- a. Element: Cesium Mass number: 137
- b. Chemical and Physical Form: Ceramic Microspheres,  
Double Encapsulated,  
Special Form Sealed Source,  
3M Model 4F6S  
1500 millicuries  
(Certificate of Competent  
Authority Attached)  
or  
Gulf Nuclear Model CSV
- c. Maximum amount which will be possessed at any one time:  
Two sources. No single source to exceed 1500 millicuries.

Item 6. Purpose for which license material will be used:

For use in a spinning pipe gauge for measuring wall thickness of pipe. The spinning pipe gauge is an Wm. B. Wilson, Inc., Model No. 2202 Wall Caliper. The manufacturer holds a Specific License by the of Texas Department of Health to manufacture the device.

Due to the low levels of radiation, we respectfully request that it be written into our license conditions that no personnel monitoring is required. The radiation levels at any point on the surface of the source holder are less than 40 millirems and at 3-feet feet from any point on the surface of the source holder are less than 1 millirem.

DOT labeling for transportation purposes is Radioactive Yellow II.

Item 7. Individual Responsible for Radiation Safety Program and his Experience and Training.

Clinton Delong: Resume relating to radioactive material is attached.

Item 8. Training for individuals working in or frequenting restricted areas:

The levels of radiation from this spinning pipe gauge are such that there is no restricted area. When inspecting pipe, the source holder emits a pencil thin beam directed through the pipe into a scintillation crystal. The scintillation crystal is completely shielded except for the beam entry window. The beam is unaccessable when inspecting pipe. When not engaged in pipe inspection operation the source holder OPEN/SHUT slide mechanism is locked in the SHUT position.

However, each Authorized User (Operator) of these units will be trained in radiation safety by the International Pipe Inspectors Association.

Item 9. Facilities and Equipment:

Attached is a drawing of the facilities where the units will be stored when not inspecting pipe at a remote location.

Item 11 - Waste Management.

When it becomes necessary to dispose of the 1.5 Curie Cesium 137 Special Form source, disposal will be accomplished through NSSI, Gulf nuclear, or other specifically licensed firm.

July 5, 1985

SOURCE USE LOG  
AND  
TRANSPORTATION SURVEY FORM

DATE: \_\_\_\_\_

CUSTOMER NAME: \_\_\_\_\_

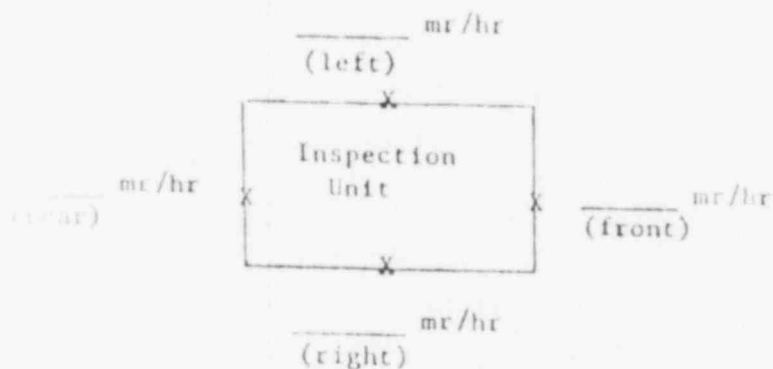
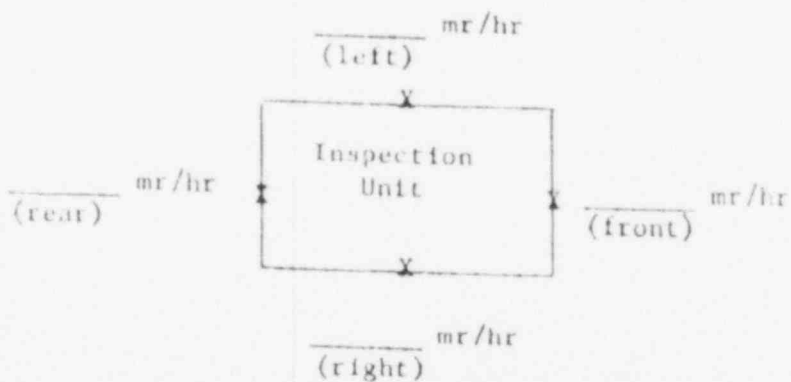
LOCATION: \_\_\_\_\_

SURVEY METER IDENTIFICATION:

Manufacturer: \_\_\_\_\_

Model No.: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Before Job ReadingAfter Job Reading

Source Serial No.: \_\_\_\_\_

Isotope: \_\_\_\_\_

Signature: \_\_\_\_\_  
Operator

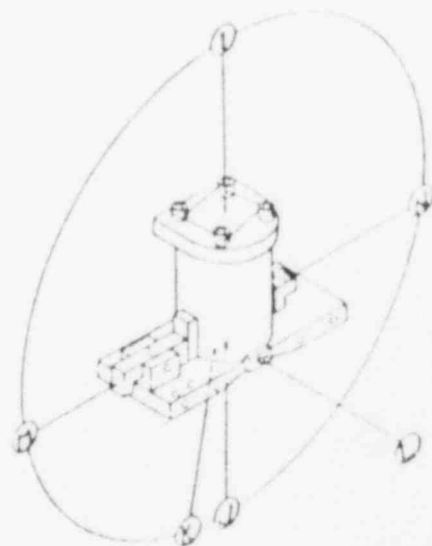
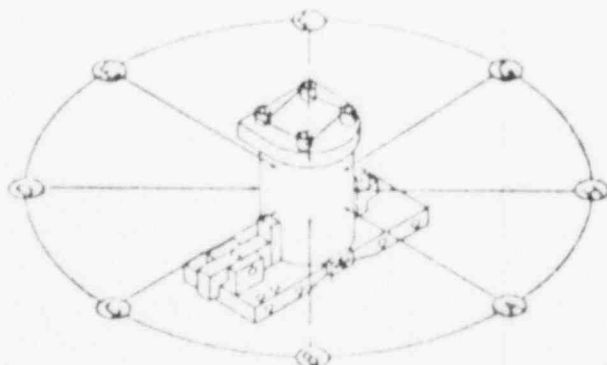


Source Serial No.

Millirems per Hour

	Reading Position	Millirems per Hour					
		Slide Open			Slide Shut		
		Surface	1-foot	3-feet	Surface	1-foot	3-feet
Curies - Date	A						
	B						
	C						
	D						
	E						
	F						
	G						
	H						
Installed in Unit	Top						
	Thruwall						
	Aperture						
	Chord						
Survey Date	Aperture						
	Blocks						
	Slide						
	Slide						
Survey Instrument Model No.							
Serial No.							
Calibration Date							
Surveyed by							

(Signature)



Attachment 1:

Copy of the

SHIPPER'S CERTIFICATION FOR RADIOACTIVE MATERIALS FOR PUBLIC CARRIER  
SHIPMENTS (Motor Vehicle or Water Transportation) with attached

DOT IAEA CERTIFICATE OF COMPETENT AUTHORITY for the 3M Model 4F6S  
Special Form Radioactive Material Encapsulation.









0	12	36

OPEN  
CLOSED

0	12	36

OPEN  
CLOSED

0	12	36

OPEN  
CLOSED

		0
		12
		36

OPEN  
CLOSED

DATE: \_\_\_\_\_

UNIT: \_\_\_\_\_

S. NO: \_\_\_\_\_

S/N GEIGER COUNTER: \_\_\_\_\_

SURVEYED BY: \_\_\_\_\_

		0
		12
		36

OPEN  
CLOSED

**1,5 CURIE SOURCE PROFILE CHART**

**LEAD**

**ABSORBER**

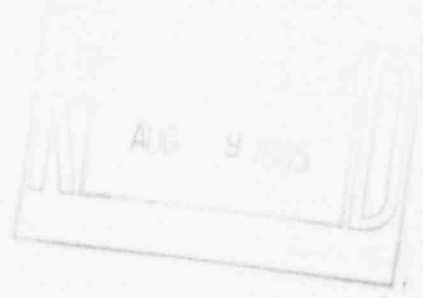
0	12	36
X		

OPEN  
CLOSED



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV  
611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TEXAS 76011



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

R. J. Everett, Chief  
Material Radiation Protection Section, TPB,  
DV&TP, RIV

LICENSEE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee:

Disco, clnc

Application Dated:

Received Jul 18, 1985

Control No.:

760712

License No.:

(030-28806)

2. FEE ATTACHED

Amount:

✓

Check No.:

✓

3. COMMENTS

Applicant states there is \$230 enclosed but  
I couldn't locate it.

Signed

Laura Hurley

Date

July 25, 1985

B. LICENSEE FEE MANAGEMENT BRANCH

1. Fee Category and Amount:

3P \$ 230

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

Amendment           

Renewal           

License ✓

Signed

CP

Date

8/6/85