NRC Form 313P (4-82) 10 CFR 34	APPLICATION	N FOR BYPR	DUCT MATERIAL RCES IN RADIOG	Approved by OMB 3150-0023 Expires 12-31-84			
SHEET WHERE NECE ARE FURNISHED. I DEFICIENT OR INC REQUIRED, SEE ITEI	NRC FORM 313R INSTRU SSARY) BE SURE ALL IT F ANY PORTION OF T OMPLETE APPLICATION M 7 OF INSTRUCTIONS.	EMS ARE C	OMPLETED AN ATION IS NOT	D THAT ALL NECESS APPLICABLE SPECI	ARY ATTACHMENTS FICALLY SO STATE.		
1(a) NAME AND ADDRESS OF APP	PLICANT AND TELEPHONE NUMBER		2 THIS IS AN A	PPLICATION FOR: (Chec	k appropriate item)		
TELEDYNE OHIOCAS			A NEW LICE	NSE			
1075 James Stree Springfield, OH	45502 ea Code (513) 325	7631		ENT TO LICENSE NO OF LICENSE NO34-	-00412-03		
1.(c) APPLICANT IS: An individual Unincorporated Association ual, the applicable section on			Teledyne 1075 Jam	ERE SEALED SOURCES WILL BE I be other than named in 1(a). Hey Ohiocast es Street eld. OH 45502			
4. SEALED SOURCES TO	BE USED IN RADIOGRAPHY	Attach supp	I Springfin lementary pages, if	necessary)			
BYPRODUCT MATERIAL (Element and Mass No.)	SOURCE MODEL NUMBER	NAME OF	MANUFACTURER	MAXIMUM ACTIVITY	NUMBER OF SOURCES		
	Model B-2G		Ind. or	PERSOURCE			
A Cobalt 60 B Iridium 192 C Iridium 192	A Model 34500 B Model B-2G c Model B-1-G	A Autom a Gamma c Gamma		A 14 Curies B 60 Curies c 60 Curies	A. 1 B. 1 C. 1		
5(a) RADIOGRAPHIC EXP	OSURE DEVICES (Attach sup	plementary pr	iges, if necessary)	1	1		
MODEL	NUMBER	NA	ME OF MANUFAC	TURER (Include descripti	on if custom made)		
A Model 52 B Model 52 C Model 100	 A. Automation Ind. B. Automation Ind. c. Automation Ind. 						
the state of the	RCE CHANGERS (Attach sup	1					
MODEL /	NUMBER	NA	ME OF MANUFAC	TURER (Include descripti	on if custon, made)		
A G-8 - Model 5 8 C-10 - Model c. C-10 - Model	e. Gam	ma Ind. ma Ind. ma Ind.					
 (a) Description of radiagraphic (b) Description of radiation det (c) Instrument calibration prace (d) Personnel monitoring equip (e) Operating and emergency s (f) Training program (Instruction) 	tection instruction $\delta - c_1$ ment (Instruction $\delta - c_1$ ment (Instruction $\delta - d_1$ procedures (Instruction $\delta - e_1$ n $\delta - f_1$ r other management control (Instruction cture (Instruction $\delta - h_1$ itruction $\delta - i_1$	(on ő-b) (ő-g)			n the instructions with this form.) Previously Submitted on $7-25-83$ on $7-25-83$		
7 108 18810 107 100 100 00	CERTIFICATE (Thi	s item must	be completed b	y applicant)			
DERNITY WITH THE FO, COD IS TRUE AND CORRECT TO THE LICENSE FEE ENCLOSED S _ PER NRC Part 17	FICIAL EXECUTING THIS CERTIFICATE E OF FEDERAL REGULATIONS, PART 3 E BEST OF OUR KNOWLEDGE AND BE 150.00 70.31 Category 3.C	O, AND THAT ALL	Steve H	INED HEREIN, INCLUDING ANY S (Signature) art or print name of certifyin	SUPPLEMENTS ATTACHED HERETO,		
DATE 1/23/03	and the second se	1.1	Safety	(Title of certifying officia			
UAIP							

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NRC FORM 313R (4-82)

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LEGAL STRUCTURE OF APPLICANT

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If applicant is a corporation, complete Items 8 through 11; if applicant is a partnership, complete Items 12 through 14; if applicant is an unincorporated association or a legal entity other than a partnership or corporation, complete Items 15 and 16. Attach separate sheets where space provided proves inadequate.

		CORFORATION					
8. STOCK OF APPLICANT CORP	ORATION						
NO. OF SHARES AUTHORIZED	NO. OF SHARES ISSUED	NO. OF SHARES SUBSCRIBED	TOTAL N	TOTAL NUMBER OF			
60,000,000	32,339,685	Not Available	(e) Stockholders Not Available	(b) Subscribers Not Available			
	ctly or indirectly controlled by anothe e and address of other corporation or C: Of the Stars CA 90067	other legal entity and describe how, su Teledyne Ohio	ves x ch control equils and the potent three cast is a division inc., which is a su	∾ □ n of Teledyne ubsidiary of			
 (a) Identify by name and a outstanding ar (2) subscribin 	ddress any individual, corporation, a ng to 10 percent or more of the autho ddress all officers and directors of the	r other legal entity (1) awning 10 perc prized but unissued stock of the corpora i corporation. (b) Henry S George	ent or more of the stock of applicant tion	corporation issued and n of Board, C.E.O. t			
State of Dela		es of which the applicant is incorporate	a.				
12. Name and address of each	individual or legal entity owning a p	PARTNERSHIP portnership interest in the opplicant.					
13. State the percent of owners	ship of the applicant partnership held	f by each of the individuals or legal en	tities listed in item 12.				
14. Identify the State, District,	Territory, or possession under the la	ws of which the applicant partnership is	organized.				
		OTHER					
15. Describe the nature of the	applicant and identify the State, Dia	rrict, Territory, or possession under the	laws of which it is organized.				
16. State the lata! number of m	rembers or persons holding an owner	ship in the applicant, identify each by	name and address, and indicate the o	wnership interest thereof			
-				GPO \$85+673			

1075 JAMES SIREET P.O. BOX 900 SPRINGFIELD, OHIO 45502 TELEPHONE (513) 325 -7631 TELEX 20 -5415

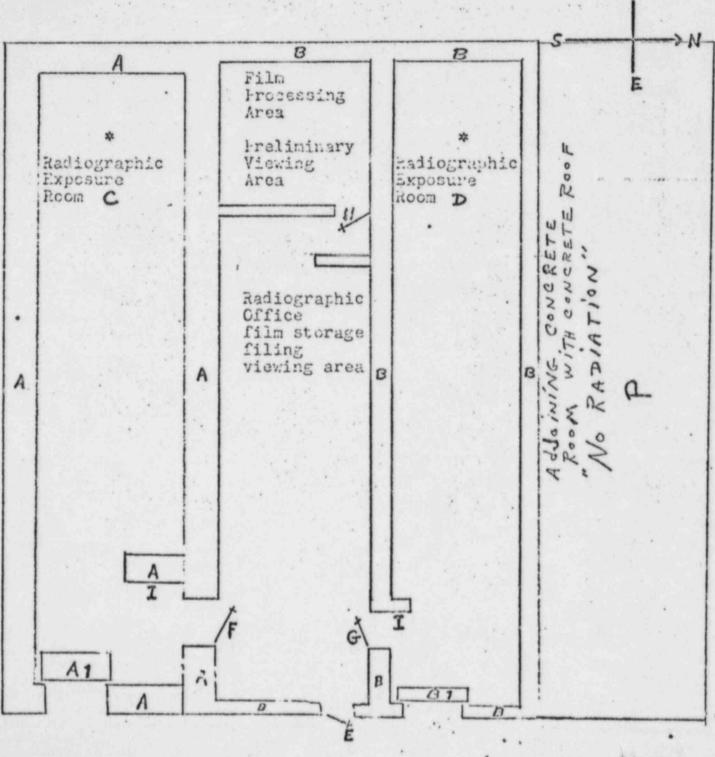
Radiographic facility layout Descriptions page two

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S. .:

page one



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Descriptions of radiographic facility layout on page one

Fage two

- A. Heavy concrete walls 24" thick, housing Cobalt 60 Isotope and Ir 192
- B. Heavy concrete walls 16" thick, housing Iridium 192
- C. Exposure room for apparatus multitron model 52 and Iriditron model 100
- D. Exposure room for apparatus Iriditron Model 10a or model 100
- E. Entrance to facility. Wood door with key lock.
- F. Entrance to exposure room c. Steel door lead lined, key lock and equipped with warning light and bell mechanically linked to drive cable source position indicator.
- G. Same as F.
- H. Door to film processing area, wood construction light proof.
- I. Area where radiographer stands behind concrete baffle and cranks sources mechanically into exposed and sheilded positions.
- *. Indicates source position location in exposure room . Radius from * 60". Actual exposure area 100 sq. ft. floor area. Maximum heighth of source from floor 72".

Roof of the exposures rooms is of sheet metal and transite material. These materials do not lessen the intensities of radiation being emitted when the sources are in the unsheilded condition. The border area at the roof line of the entire facility is equipped with a barbed wire fence properly labeled with signs on all sides reading caution high radiation area. There are no persons working within the immediate adjacent area to the facility and no one works in adjacent areas higher than ground level. The area surrounding the facility is rated as non restricted area based on actual survey readings taken on all sides of the facility (outside) when the sources were in the unsheilded condition. Survey instrument Victoreen model 592B used for survey indicates less than 2 mr/hr. CooO source strenth 9 curies and Ir 192 source strengtm 43 curies. Survey made 6-23-71.

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DESCRIPTION OF RADIATION INSTRUMENTS USED BY TELEDYNE OHIOCAST.

MANUFACTURER	MODEL	SERIAL NO.
Victoreen	OCDM ITEM #CDV 700 #6A	67433
Gamma	250 B	1083
Victoreen	492	4133
Victoreen	592 B	1909

Note: All above instruments are calibrated routinely by Gamma Industries.

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1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 TELEX 20-5415 July 27, 1983 Page 1 of 4

TO: RADIOGRAPHERS.

SUBJECT: Operating and Emergency Procedures, Reference: License No. 34-00412-03.

Management control of the radiographic operation at Teledyne Ohiocast, 1075 James Street, Springfield, OH 45502.

G. Madden - President and Manager of Plant.
J. Jordak - Quality Assurance Director.
S. Hart - Safety Officer.
G. Epley - Assistant Safety Officer.

Radiographers: G. Epley.

Instructions for handling and using radiographic exposure devices, and sealed sources contained within the devices. Ref. 10 CFR, Part 34.

PARA. A. Prior to the first exposure and after the last exposure of the working day, the radiographers are to conduct a radiation survey check of the exposure rooms and devices as follows:

Warm up a calibrated survey meter. Put on a charged dos meter and wear film badges. After adequate warm up of survey meter (Victoreen Model 492 or Gamma Ind. Model 250B) unlock exposure room door and survey room, device and source tube with the meter on the X-10 scale. With the source in the exposure device and in the shielded condition, a survey of the device should show the approximate mr/hr that is marked on the device as measured with the survey meter 4" from the surface of the device. If this survey indicates everything is normal record in the log book the date, time and state that the survey was made and acceptable, and initial the log. Proceed to check out equipment, such as connections, cables, drive mechanisms, warning bell and lights to be assured that all equipment is in readiness.

The exposure devices are also the storing devices and the operation of the device follows. Set up your exposure. Unlock the device (Model 52, 520 or 100) retire behind the concrete barrier. Crank source into the exposed condition by turning the crank in a clockwise direction. Log all necessary information in the log book (date, set up time, time source placed in the unshielded condition, actual exposure time). Upon completion of the exposure and with a warmed survey meter in hand, crank the source into the shielded condition by turning the crank in a counter clockwise direction until the drive mechanism comes against a stop. At this point the warning light and bell should cease. Survey the room, device and source tube. Lock the device and log the time, the source has been returned to the shielded condition and initial in the log that the above was accomplished. Proceed with the next exposure.

Prepared by S. Hart, Safety Officer, Teledyne Ohiocast, Springfield, Ohio.

TELEDYNE OHIOCAST 1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 TELEX 20-5415

Page 2 of 4

July 27, 1983

SUBJECT: Operating and Emergency Procedures Cont'd.

PARA. B. Radiation Surveys.

Radiographers are to perform surveys with operable and calibrated meters at times and intervals stated in PARA. A. All other surveys shall be performed by the Safety Officer or his assistant at source replacement times and at time of leak testing not to exceed 6 months.

PARA. C. Controling Access to Radiographic Facilities.

Main entrance door is to be locked at all times the radiographers are not at the site, overnight, week ends, vacations, holidays. The exterior walls of the concrete facility are posted with 24" x 24" painted signs (DANGER RADIOACTIVE MATERIALS). This area is unrestricted. Above the concrete facility there is barbed wire (three separate strands) that go completely around the facility, and signs are posted on all sides (CAUTION HIGH RADIATION AREA). Just inside the main entrance is considered a restricted area solely because this area is controlled. This area is the viewing room area and is not restricted to persons other than radiographers, in that during radiograph operations the radiation level in this area is less than 2 mr/hr. The doors to the exposure rooms (See Layout) F & G are posted with signs on the viewing room side CAUTION HIGH RADIATION AREA. These doors are steel and lead lined to allow 2 mr/hr or less to the viewing room side of the doors. On the exposure side of these doors during radiographic operations, there does exist radiation levels in excess of 5 mr/hr. This area just inside the exposure room doors is the radiographers station for remotely cranking the source into the shielded or unshielded condition. This area is controlled by the radiographer through radiographic operations, as noted in PARA. A. Persons other than the radiographers are permitted in the exposure room areas with the radiographer who has secured the area as noted in PARA. A., for the purpose of moving casting products in and out of the rooms by truck, maintenance work on the building, cranes, electrical work, gas and air lines, heaters and fans, and for the purpose of reviewing radiographic results of a part by foundry foremen day to day. The reviewing of radiographic work within the exposure room areas is a scheduled time in the morning between 8 and 9 A.M. and the rooms are to be secured per PARA. A. for this purpose. The radiographers are to control the keys to the facility and devices at all times.

PARA. D. Methods and Occasions for Locking and Securing Exposure Devices.

The exposure devices are to be kept locked at all times except during actual radiographic operations. The exposure room doors are to be locked except during actual radiographic operations. Secure the devices and facility as noted in PARA. C. All keys to the facility, exposure rooms and devices are the responsibility of the radiographers and the safety officer for securing the facility against unlawful entry. Note: All sources and devices are to be stored in the exposure rooms at all times.

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July 27, 1983

TELEDYNE OHIOCAST 1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 TELEX 20-5415

SUBJECT: Operating and Emergency Procedures Cont'd.

PARA. E. Personnel Monitoring Equipment

All personnel monitoring equipment is supplied by the company and the radiographers are required to wear film badges and dosimeters. The dosimeters are to be charged at the beginning of work shift. Dosimeter readings are to be recorded in the log book daily. Film badges and dosimeters to be left in metallurgical laboratory after working hours. Dosimeters are to be checked periodically through the work day, and in the event a dosimeter goes off scale, notify the safety officer or his assistant and stop all further radiographic work until the safety officer has cleared any possible problem that may exist.

PARA. F. Transporting Sealed Sources.

This section not applicable in that all sealed sources are to be used within the facility.

PARA. G. Minimizing Exposure to Persons in the Event of an Accident.

Radiographers Note: Conditions or accidents which might occur wherein radiation levels exist above safe limits, or mechanical apparatus fails, you are instructed to: protect yourself and all persons from radiation by either available shielding or distance, whichever is appropriate. Do not attempt any repair of mechanical failure. Report immediately to the safety officer or his assistant. See PARA. H. for follow up.

PARA. H. Notification of Proper Persons in the Event of an Accident. Radiographers are to Call the Persons Listed Below in the Order Listed.

S.	Hart	H.	Telephone	322-8634.
G.	Epley		Telephone	834-2276.
Л.	Jordak		Telephone	390-3097.

In the event radiation exists beyond any shielded area call the plant guard office immediately, so that all other persons can be alerted and directed to stay out of any suspected area of radiation. The safety officer will call for any out of plant help if required or report to the necessary N.R.C. Office, if the condition dictates.

PARA. I. Maintenance of Records.

Radiographers are responsible for maintaining the following records.

- 1. Change monthly film badges.
- 2. Locking and securing apparatus and doors.
- 3. Use of survey meters, which are calibrated and operable.
- 4. Package survey meters to be sent out for calibration.
- 5. Assist the safety officer at source replacement time, maintenance and lubrication of devices, cables, etc.
- 6. Indicates actual record not required.

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July 27, 1983

SUBJECT: Operating and Emergency Procedures Cont'd.

PARA. I. Maintenance of Records Cont'd.

Maintain radiographic log. Record daily dosimeter reading in log book. Record in the log book the survey required prior to the first exposure of the day and after the last exposure of the day.

The safety officer will maintain all other records as may be required such as:

Film badge records and reports. Yearly reports of exposures to radiographers. Inventories. Leak test reports. Source disposal records. Facility survey records. Source replacement records. Correspondence records. TELEDYNE OHIOCAST 1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 TELEX 20-5415

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July 27, 1983

TRAINING MANUAL

CONTENTS

N.R.C. REQUIREMENTS

Control and Radiological Protection Procedure.

Written Operating and Emergency Procedures.

Part 20 of N.R.C. Regulations.

Part 30 of N.R.C. Regulations.

Part 34 of N.R.C. Regulations.

Gamma Radiation (Fundamentals).

Units of Radiation Dose.

Hazards of Excessive Radiation.

Radiation from Licensed Materials.

Methods of controlling radiation.

Working Time. Working Distance. Shielding.

Use of Radiation Survey Instruments.

Survey Techniques.

Personnel Monitoring.

Film Badge. Dosimeter. Pocket Chambers.

Remote Handling Equipment for Radioactive Isotopes and Storage of Isotopes. Training Program. Internal Inspection Program. Leak Test Procedure. Source Exchange Procedure.

TELEDYNE OHIOCAST 1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 TELEX 20-5415

July 27, 1983

TRAINING PROGRAM Revision 3 Page 1 of 3.

Ref. to 10 C.F.R. Part 34 (a) and (b) training of radiographers and radiographers assistant under the direction of the safety officer or his assistant.

PARA. A. - SUB. PARA. 1. Pertains to information, material and time study schedule for training of radiographers assistant. (34.31b)

PARA. A. - SUB. PARA. 2A. Pertains to information, material and time study schedule for training of radiographers. (34.31a)

- A. Initial Training (Written Test Required).
- 1. As a trainee for radiographers assistant, you are hereby supplied with our operating and emergency procedures and other study material pertaining to survey meters, dosimeters, film badges, and handling tools. You will be required to study this material and you will receive instructions on this material by the safety officer or his assistant per the following schedule:
 - (a) Training schedule will be four (4) weeks.
 - (b) The first week you will be required to study the material provided to you and become familiar with the facility layout.
 - (c) The second and third week, you will continue your study of the procedures and you will receive instructions in them as follows:

1 hour formal instruction per day for two (2) weeks. Total 10 hours. This will provide you with a minimum of instructions of 1 hour for each paragraph of the procedures.

(d) The fourth week will provide you with the time to be with a radiographer to witness actual radiography, and to see how relaced tools are used in the operation. On the fifth day of this week, you will be required to take a closed book test based on the material you have been studying. It will be necessary for you to pass this test to the satisfaction of the safety officer, in order for you to be classified as a radiographers assistant.

In order for any person to be a radiographer or assistant, certain requirements must be met. The person must be 18 years of age or older, must be approved by the plant physician, (health status) must have adequate schooling that would allow the person to understand the training material, and to be willing to be trained for a radiographer or assistant.

PREPARED BY: S. Hart, Safety Officer.

Page 2 of 3

TELEDYNE OHIOCAST

1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 TELEX 20-5415

July 27, 1983

TRAINING PROGRAM, REVISION 3.

- 2. Training for Radiographer Ref. 10 C.F.R. Part 34.31a.
 - A. The employee who has passed the written test for radiographers assistant will be permitted to perform radiographic functions under the direction of the radiographer. The employee will be eligible to be trained for radiographer using our training manual as the source of study material. The total time study and formal training period is 90 days, with 12 hours formal training of the following topics required by 34.51, Appendix A. The formal training will be given by the safety officer or his assistant.

Six (6) hours formal training in fundamentals of radiation safety.

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One (1) hour formal training in radiation detection instruments.

- (a) Use of radiation survey instruments.
- (b) Calibration.
- (c) Limitations.
- (d) Survey Techniques.
- (e) Personnel monitoring equipment.

One (1) hour formal training in use of radiographic equipment.

Two (2) hours formal training in the use of Federal Regulations, Part 20, Part 30 and Part 34.

(a)	Part	20.	1 hour.
(b)	Part	30.	1/2 hour.
(C)	Part	34.	1/2 hour.

Two (2) hours formal training in written operating and emergency procedures.

- (a) Instructions for handling and using radiographic exposure devices.
- (b) Radiation Surveys.
- (c) Controling access to radiographic facilities.
- (d) Methods and accasions for locking and securing exposure devices.
- (e) Personnel monitoring equipment.
- (f) Minimizing exposure to persons in the event of an accident.
- (g) Notification of persons in the event of an accident.
- (h) Maintenance of records.
- (i) Inspection and maintenance.

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TELEDYNE OHIOCAST 1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 7ELEX 20-5415

July 27, 1983

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TRAINING PROGRAM, REVISION 3.

- 2. Training for Radiographer Ref. 10 C.F.R. Part 34.31a.
 - A. At the end of this 90 day period, the employee will be given a written test. (Form TOC #2) This is a closed book test given by the safety orficer or his assistant. A grade of 70 is the intended passing minimum. A grade of 65 to 70 is a marginal grade and is subject to review by the safety officer, who will make a judgement of the test to determine the resulting answers by the employee meet the intent of the test or whether the situation dictates further training of the employee. Should the safety officer consider the test results satisfactory, the new employee shall be considered a radiographer and his test will be filed with the comments of safety officer. Should the saftey officer determine that further training of the new employee is required, an additional two week study period will begin and at the end of this two week period another written test will be given the new employee. Should the employee fail this test, he will not be trained further and will be released from the department.
 - B. On-the-job training per Paragraph 2 above and continued.
 - C. Periodic training shall consist primarily of the training manual up-date through acquisition of new information such as: changes or amendments to commission regulations; changes in equipment, survey instruments, exposure devices, changes in operating and emergency procedures. The training manual will be maintained as up to date as possible by the safety officer, and review of the contents with the radiographers at appropriate times as the situation dictates.
 - D. Annual training will consist of at reast 40 hours per radiographer.

E. Examination and qualification per A.2.

PREPARED BY: Star Wart

S. Hart, Safety Officer

1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 TELEX 20-5415

July 27, 1983

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Page 1

SUBJECT: Inspection & Maintenance Program for Radiography Equipment per 34.28, C.F.R. 10, Part 34 and 34.32J.

As noted in PARA. 34.32J, the following is added to and in conjunction with our operating & emergency procedures in a clarified and form set.

DESCRIPTION OF CURRENT EXPOSURE DEVICES.

Panoramic Devices: Automation Industries Models 52, 520 & 100. Automation Industries - Model 52 - Lead Shielding - Encased in Aluminum. Automation Industries - Model 520 - Lead Shielding - Encased in Aluminum.

Automation Industries - Model 100 - Depleted Uranium - Encased in Aluminum.

SOURCES IN USE

Automation	Industries	-	Model	52	-	14	Curies	(co 60)		
Automation	Industries	-	Mode1	520	-	60	Curies	Maximum.	(ir	192)
Automation	Industries	-	Mode]	100	-	60	Curies	Maximum.	(ir	192)

SOURCE EXCHANGE RATE

Cobalt	60	Approximately 5	years.	
Ir 192		45	days.	

Inspection and/or preventative maintenance of equipment as noted is hereby set forth specifically for each device.

One spare complete drive cable mechanism maintained on hand.

New spare source tube on hand. Spare drive cable. (Inside) Spare parts one hand-threaded connectors, swivels, screws, nuts, etc.

1075 JAMES STREET - P.O. BOX 900 SPRINGFIELD, OHIO 45501 TELEPHONE (513) 325-7631 TELEX 20-5415

July 25, 1983

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Ref: Renewal of License No. 34-00412-03.

United States Nuclear Regulatory Commission Radioisotopes Licensing Branch Division of Fuel Cycle and Material Safety Washington, D.C. 20555

Gentlemen:

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Supplementary Page 1

4. Sealed sources to be used in Radiography.

D. Iridium 192 D. Model B-8-G D. Gamma Ind. D. 60 Curies D. 1

5(a). Radiographic exposure devices.

D. Model 520 D. Automation Ind.

5(b). Radiographic source changers.

D. C-10 - Model 520 D. Gamma Ind.