(7-87)	U.S. NUCLEAR REGULATORY CO	ED BY OMB			
10 CFR 30, 32, 33, 34. 36 and 40 APPLICATION FOR	R MATERIAL LICENSE	0			
INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR I OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED B		COPIES			
APPLICATIONS FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH	IF YOU ARE LOCATED IN:				
U.S. NUCLEAR REGULATORY COMMISSION DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS WASHINGTON, DC 20666	ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISBOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:				
ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN: CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,	U.S. NUCLEAR REGULATORY COMMISSION, REGION III MATERIALS LICENSING SECTION 796 RODSEVELT ROAD GLEN ELLYN, IL 60137				
MASSACHUSETTS. NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA. RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:	ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:	A.			
U.S. NUCLEAR REGULATORY COMMISSION, REGION I NUCLEAR MATERIALS "AFETY SECTION B 631 FARK AVENUE KING OF PRUSSIA, PA 19406	U.S. NUCLEAR REGULATORY COMMISSION, REGION IV MATERIAL RADIATION PROTECTION SECTION 611 RYAN PLAZA DRIVE, SUITE 1000				
ALABAMA, FLORIDA, GEORGIA, KENTUCKY, RIBBISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:	ARLINGTON, TX 78011 ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, BEND APPLICATIO	ÓNS			
U.S. NUCLEAR REGULATORY COMMISSION, REGION II NUCEAR MAYERIALS SAFETY SECTION 101 MARIHETTA STREET, SUITE 2800 ATLANTA, GA 30323	TO: U.S. NUCLEAR REGULAYORY COMMISSION, REGION V NUCLEAR MATERIALS SAFETY SECTION 1460 MARIA LANE. SUITE 210 WALNUT CHEEK, CA 34696				
PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAF IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.	REQULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED	MATERIAL			
1. THIS IS AN APPLICATION FOR (Check appropriate (tem)	2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)				
A. NEW LICENSE	Virginia Paving Incorporated				
B. AMENDMENT TO LICENSE NUMBER	101A Executive Drive - Suite 201				
C. RENEWAL OF LICENSE NUMBER	Sterling, Virginia 22170				
Route 606 in Sterling, Virginia. Various subject to NRC's Regulatory Authority. * NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION R. Brent DuBose	ТЕLЕРНОМЕ NUMBER 703-471-8787				
SUBMIT ITEMS 5 THROUGH 11 ON 8% x 11" PAPER. THE TYPE AND SCOPE OF INFORMAT	TON TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.				
B. RADIDACTIVE MATERIAL a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.	6 PURPOSEISI FOR WHICH LICENSED MATERIAL WILL BE USED.				
7. INDIVIDUALISI RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.	8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTE	D AREAS.			
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APPLICATION FOR MATERIAL LICENSE

5. RADIOACTIVE MATERIAL

For use in Troxler Model 4640 Surface Density Gauge. Cesium 137 Sealed Source as per Troxler Drawing #A-102112 Maximum of 9 MCI per source.

- 6. For use in Troxler Model 4640 Surface Density Gauge for measuring density of surface esphalt.
- 7. Robert Brent DuBose Radiation Protection Officer

I was the Radiation Protection Officer for Shirley Contracting Corporation in Lorton, Virginia, but I was transferred to Virginia Paving Incorporated, which is a division of Shirley Contracting Corp. In 1979 I attended the Troxler Training Seminar at the Troxler office in North Carolina. In 1985 I attended the Troxler Training Seminar in Baltimore, Maryland and at that time Shirley purchased a 3411B Density Gauge. See attached Shirley Contracting Corporation Materials License.

Harold Lee Richardson -

Attended Nuclear Training Seminar conducted by The Virginia Department of Transportation in 1984, and will be attending the Troxler Training Conference on March 29, 1988 in Richmond, Virginia.

Don Fair -

Has attended Troxler Nuclear Guage Training Conference on February 22 and 23 See attached certificate:

Charles Keeney -

Has attended Troxler Nuclear Guage Training Conference on February 22 and 23 See attached certificate:

Joseph Freeze -

Will be attending the Troxler Training Conference on March 29, 1988 in Richmond, Virginia.

- 8. Don Fair and Harold Richardson will be the only individuals frequenting the storage area for the Nuclear Gauge. Either Don Fair or Harold Richardson will be using the Density Gauge. Any employees who will be using or handling the Nuclear Gauge will have completed the manufacturer's program or an equivalent training program. Virginia Paving Incorporated will maintain all training documents for a minimum of 2 years.
- 9. Our Nuclear Gauge will be stored in a locked storage room (approximately 5' x 10' area) and the gauge will be locked in its case which will be chained to an anchor bolt imbedded in the concrete floor. This storage room is within our Plant's Laboratory. The gauge will be transported within its case, locked in a tool box bolted to the bed of a pick-up truck. The gauge will be returned to the storage room each night after use. All transportation will be according to applicable DOT Regulations.
- 10. See attached Radiation Safety Program which will be used by Virginia Paving Incorporated.

(Review application guide to see if its answers all questions)

11. Waste Management

When we are to dispose of our licensed material it will be done through Troxler Electronic Laboratories, Inc. which will be our orginal supplier of the device.

VIRGINIA PAVING INCORPORATED

GUIDE TO

HANDLING OF THE NUCLEAR DENSITY

GAUGES AND CLEANING OF THE GAUGES

The Nuclear Moisture-Density Gauges are equipped with a radioactive source (Cesium 137). This equipment is very expensive and should be handled as an expensive and dangerous piece of equipment. This equipment should also be maintained and kept clear at all times. Listed below are the rules to follow when using this equipment.

- Place the equipment in a secure position when being being transported. Always carry gauge in the boxes provided.
- 2. Never throw or beat around any part of the system. Each part of the system has its importance and should be handled with care.
- Never ride with the gauge in the cab of the vehicle, except as noted in rule 9. This is strictly against all safety rules.
- 4. Do not attempt to work on any part of the system at any time. The only maintenance that should be done by the operator or any other individual is keeping the system clean at all times.
- 5. Never leave the system setting on the ground or out of the truck unattended at any time. When the gauge is in the field, you as the authorized user must maintain control over the gauge at all times.
- 6. When not making measurements, the gauge should be placed in the transportation case and returned to its permanent storage area as soon as possible. The gauge is to be used for its intended purpose only. By doing so, you will maintain any radiation exposure to as low as reasonably attainable.
- 7. When using the equipment, you will wear the personnel monitoring device that has been assigned to you. When you are not using the equipment, your monitoring device is to be stored in the radiation free area that has been designated in the office.

- 8. The complete system, including the case, gauge, and standard, should be kept clean at all times. Never let dust and dirt collect on the system for long periods of time, keep clean of all asphalt materials and foreign materials. Never use a cleaner that will take the paint off the system or will remove the Radiation symbols. Never use paint to mark the gauge seating.
- 9. Never let the gauges get wet. If you are caught out on the project and it begins to rain, place the gauge in the truck and take to the office as quickly as possibly.
- 10. Be careful with the gauge at all times so it will not get involved in an accident. Operators of heavy equipment cannot see the equipment setting on the ground.
- 11. The Nuclear Density Gauges is a fast method of testing and saves you and the inspectors a lot of time and work. Take care of the Gauges to assure their continued use by the Department. This is a new and modern method of testing asphalt and should be appreciated by the individual operating the unit.
- 12. Any negligence on the part of the individual using the system that causes damage to the same could lead to some disciplinary action.
- 13. Keep Source Rod locked when not in use.
- 14. Keep gauge in its Transport Case and be sure the BOX is locked, and lock to the vehicle when not in use. The U.S. Department of Transportation requires that the gauge be transported in a properly labeled carrying case.

MAINTENANCE AND LEAK TEST PROCEDURES

- 1. Periodic maintenance will include cleaning the gauge. During any maintenance, you must wear your personnel monitoring device.
- No maintenance will be performed in which the radioactive source is removed from the gauge. For this type of maintenance, the gauge will be returned to the manufacture
- 3. The leak test will be performe_ using the TROXLER Model 3880 Leak Test Kit. The leak test kit will be performed using the manufacturer's instructions. Again, the personnel monitoring device will be employed. Gauges will be leak tested at intervals not to exceed six (6) months.

RADIATION SAFETY PROGRAM

Radiation Safety Officer

R. Brent DuBose has been designated as the company Radiation Safety Officer and will assume the duties and responsibilities that include the following:

- To ensure that all terms and conditions of the license are being met and that the information contained in the license is up-to-date.
- 2. To ensure that the equipment has been leak tested in the required timely manner and that the leak test is performed in the manner prescribed by the equipment manufacturer.
- 3. To ensure that the use of the equipment is only by individuals that have been authorized by the Radiation Safety Officer and that all users wear personnel monitoring equipment when utilizing the equipment.
- 4. To maintain the records as required by the license and the regulations. These records shall include personnel exposure records, leak test records and training certificates for all users.
- 5. To ensure that the equipment is properly secured against unauthorized removal at all times when it is not in use.
- 6. To serve as a point of contact and give assistance in case of emergency such as equipment damaged in the field or theft and to notify the proper authorities in case of emergency.
- 7. To ensure that all users have read and understand the radiation safety operating and emergency procedures.

Virginia Paving Incorporated recommended instructions for immediate Emergency Action in Accidents involving Nuclear Gauges.

EMERGENCY PROCEDURES

- A. In the event of physical damage to a gauge, the following will .e performed:
 - 1. Immediately cordon off an area around the gauge. An area radius of 15 feet will be sufficient.
 - 2. If a vehicle is involved, it must be stopped until the extent of contamination, if any, can be established.
 - A visual inspection of the gauge is to be made to determine if the source housing and/or shielding has been damaged.
 - At the earliest possible time, when the situation is under control, you must contact (R. Brent DuBose at office 471-8787 or home 592-3534). Describe the present conditions and follow the instructions of the Radiation Safety Officer.
- B. In the event the gauge is lost or stolen, immediately notify the Radiation Safety Officer as listed above.
- C. When an accident occurs involving a Nuclear Moisture-Density Gauge the following rules should be applied.
 - 1. Care for or rescue any persons if injured.
 - Do not remove any articles from the area until they have been monitored.
 - 3. "gregate and detain all persons involved.
 - 4. Never let anyone remove the gauge or any equipment that is involved in the accident until the area has been cleared by a monitoring team.
 - 5. If a vehicle is involved notify the State Police and let them know that radioactive materials are involved when they are called.

THINGS FOR YOU TO DO AT A

RADIATION ACCIDENT

a. Save lives

* .

- b. Prevent danger to others by:
 - 1. Limit the number of your men near the accident.
 - Limit or divide the time equally for your men near the accident.
 - 3. Keep on-lookers back at a safe distance.
 - No one should eat, drink, or smoke while a the accident scene.
- c. Get help from a RADIATION EXPERT.
- d. Alert hospital that the victim(s) could have RADIATION CONTAMINATION.
- e. Be sure your equipment is checked for radiation before it is put back in service.
- f. Keep things under control until a RADIATION EXPERT can reach the scene or contact the scene with instructions.

RC Form 374	and and and and and and and		AR REGULATORY COMMISSION	PAGE	1OF	3	PAGE
	•		TERIALS LICENSE				
Code of Federal Regu heretofore made by 'S source, and special ha deliver or transfer suc license shall be deeme	lations, Chapter be licensee, a licen clear material des h material to pers ed to contain the ole rules, regulation	1954, as amended, I, Parts 30, 31, 32 nse is hereby issued signated below; to sons authorized to e conditions speci	the Energy Reorganization Act 2, 33, 34, 35, 40 and 70, and ir d authorizing the licensee to rece o use such material for the purpo o receive it in accordance with t fied in Section 183 of the Atom the Nuclear Regulatory Commi	reliance on stat ive, acquire, poss se(s) and at the p he regulations of nic Energy Act of	tements and bess, and trans- blace(s) design the applicab of 1954, as a	represe sfer byp nated be le Part(mended	ntations product elow; to s). This d, and is
	Licensee						
1. Shirley Cont	racting Corp	poration	3. License number	45-23089-0	1		
 8435 Backlic Lorton, Virg 		1498 CLE	AR A Expiration/date	July 31, 1	990		
6. Byproduct, source,		JU.	5. Docket or Reference No	030-28771			
A. Cesium 137 B. Americium 9. Authorize A. and B. For meas	241 S d use in the	B. Sea Kirc e Troxler M	led source oxler Dwg A-202112) led neutron source oxler wg A-102451) lodel 3400 series moi ials.	A. No sin b. No sin exceed	ssess at any of his license gle sourc eed 10 mi gle sourc 50 milli ty gauge	e llicu e to curie	uries
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		SUPPLEMENTARY SHEET		0-28771					
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(cont'd)		CONDITIONS	;					•	
14. A.	(1)	Each sealed source containing lice	nsed materia	1. other	r tha	n Hvo	Iroae	n 3.	
		with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.							
	(2)	Notwithstanding the periodic leak licensed sealed source is exempt contains 100 microcuries or less o or 10 microcuries or less of alpha	from such lead	ak tests or gamma	when	n the	sou	rce	
	(3)	The periodic leak test required by sources that are stored and not be this test shall be tested for leak another person unless they have be to the date of use or transfer.	this conditions ing used in age prior to en leak test	n does The sour any us ed withi	not a ces s se or in si)	apply except tran k mont	to s ted 1 sfer ths p	seale from to prior	
Β.	The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample, she test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the dominission.								
C.	con use	the test reveals the presence of O tamination, the licensee shall immed and shall cause it to be decontamin accordance with Commission regulation	iately withd ated and rep	new the aired or	seale to t	ed sou be dis	urce spose	from ed of	
	Div 101	days of the test with the U.S. Nuc ision of Radiation Safety and Safegu Marietta Street, Suite 2900, Atlan ipment involved, the test results, an	ards, Nuclear ta, Georgia	Materi 30323,	als S desc	afety	Sec ng t	tion	
D.	D. The licensee is authorized to collect leak test samples in accordance with the procedures described in the licensee's application dated July 17, 1985, fo analysis by Gamma Industries. Alternatively, leak test samples may be collected and/or analyzed by other persons specifically authorized by the Commission or an Agreement State to perform such services.								
carr Regu	ier lati	nsee may transport licensed materia for transport in accordance with the ons, Part 71, "Packaging of Radioad tation of Radioactive Material Under	provisions o ctive Materi	f Title al for	10, 0 Tran	Code d	of Fe	edera	

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				Safety Se	ction	0.0				
					a Street, Su	ite 2900)			
				Atlanta, GA						

TROXLER ELECTRONIC LABORATORIES, INC

HEREBY CERTIFIES THAT

BRENT DU BOSE

30

VA PAVING INC.

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC. TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

Radiological Safety

Radioactivity measurement standardization

and monitoring techniques and

gauge storage

Accident and invident procedures.

instruments.

Procedures for nuclear and transportation.

20

General safety precautions.

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- 5 Principles and practices of radiation protection.
 - Leak testing procedures.
 - Mathematics and calculations basic to 3 3
 - the use and measurement of radioactivity.
- Biological effects of radiation. 4

Gauge Operation

Field application Gauge calibration

5.

- Instrument theory
- Operating procedures
- Maintenance in in

Michael Nunley INSTRUCTOR

07-30-85 DATE

PRESIDENT W.F. Troxler

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TRONLER ELECTRONIC LABORATORIES, INC

HEREBY CERTIFIES THAT

DONALD EUGENE FAIR

of

VIRGINIA PAVING INC.

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC. TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

Radiological Safety

- Radioactivity measurement standardization and monitoring techniques and 5. Principles and practices of radiation protection. **
 - Leak testing procedures.
 - Mathematics and calculations basic to si is
 - the use and measurement of radioactivity.

gauge storage

Accident and incident procedures.

instruments.

Procedures for nuclear and transportation.

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Biological effects of radiation. 4

Gauge Operation

Field application Gauge calibration

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General safety precautions.

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- Instrument theory N ON M
- Operating procedures
 - Maintenance

Harvey Dunlevy INSTFUCTOR

W.F. Troxler PRESIDENT

21841

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02-22-88 DATE

TROXLER ELECTRONIC LABORATORIES, INC

MEREBY CERTIFIES THAT

CHARLES ELMOR KEENEY

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Harvey Dunlevy INSTRUCTOR

02-22-88

PRESIDENT F. Troxler

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DATE

21843

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۰. (FOR LEMS USE) INFORMATION FROM LTS * BETHEENS LICENSE FEE MANAGEMENT BRANCH, ARM PROGRAM CODE: : STATUS CODE: 3 AND REGIONAL L'CENSING SECTIONS : FEE CATEGORY: : EXP. DATE: 0 : FEE COMMENTS: LICENS' FEE TRANSMITTAL A. REGION 7/ 1. APPLICATION ATTACHED APPLICANT/LICENSEE: VIRGINIA PAVING INCORPORATED RECEIVED DATE: 880324 BOCKET NO: 3030498 CONTROL NO .: 252107 LICENSE NO.1 ACTION TYPE: NEW LICENSEE 00 2. FEE ATTACHED AMOUNT: CHECK NO .: 3. COMMENTS SIGNED _____ Nerm B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED / 3. FEE CATEGORY AND AMOUNT: 3P (\$230) 2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR: AMENDMENT RENEWAL -----LICENSE ----------3. OTH SIGNED Mr. Minie DATE 3/30/58





101A Executive Drive Suite 201 Sterling, VA 22170



Nuclear Regulatory Commission Material Radiation Protection SC 101 Marietta Street, Suite 2900 Atlanta, Georgia 30303 Essester Ballance Beers and