

NRC Form 313 I (12-81) 10 CFR 30		U.S. NUCLEAR REGULATORY COMMISSION		1. APPLICATION FOR: <i>(Check and/or complete as appropriate)</i>	
APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL				<div style="border: 1px solid black; padding: 2px;">a. NEW LICENSE</div>	
<i>See attached instructions for details.</i> Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.				<div style="border: 1px solid black; padding: 2px;">b. AMENDMENT TO: LICENSE NUMBER</div>	
				<div style="border: 1px solid black; padding: 2px;">c. RENEWAL OF: LICENSE NUMBER</div>	
				X	
2. APPLICANT'S NAME <i>(Institution, firm, person, etc.)</i> MIDCO, Inc. TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION (405) 691-3911				3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION Robert C. Bales or Keith E. Moon TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION (405) 691-3911 (817) 893-2088	
4. APPLICANT'S MAILING ADDRESS <i>(Include Zip Code)</i> <i>(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)</i> P. O. Box 6322 Moore, Oklahoma 73153				5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED <i>(Include Zip Code)</i> 4230 S.W. 134th Street, Oklahoma City, Oklahoma, and temporary job site locations.	
(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)					
6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL <i>(See Items 16 and 17 for required training and experience of each individual named below)</i>					
FULL NAME			TITLE		
a. Individuals who have been trained in accordance with training program submitted with application dated 5/15/81 and meet criteria for training					
b. as set out in attached updated opening statement for training manual and					
c. who have been designated by the Radiation Protection Officer.					
7. RADIATION PROTECTION OFFICER Robert C. Bales			<i>Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.</i>		
8. LICENSED MATERIAL					
LINE NO.	ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	NAME OF MANUFACTURER AND MODEL NUMBER <i>(If Sealed Source)</i>	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME	
(1)	Americium 241:Be	Sealed Sources	Gamma Ind. (NB(HP)); NEEI or Gulf Nuclear Model 71-1.	Not to exceed 3 Curies per source.	
(2)	Cobalt 60	Solid (wires)		Not to exceed 20 uCi each wire.	
(3)	Iodine 131	Any		Max 250 mCi; Not to exceed 40 mCi per unit	
(4)	Iridium 192	Any		Max. 250 mCi; Not to exceed 20 mCi per unit	
DESCRIBE USE OF LICENSED MATERIAL E					
(1) ✓ Neutron logging in oil and gas wells.					
(2) ✓ Casing and perforation markers					
(3) ✓ Tracer studies in oil and gas wells					
(4) ✓ Tracer studies in oil and gas wells					

9. STORAGE OF SEALED SOURCES			
LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Well Logging Tools & DOT-7A containers	S.I.E. and/or Gearhart	See examples in manual
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS						
LINE NO.	TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED (alpha, beta, gamma, neutron) E	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F
(1)	A G-M survey meter for each source (gamma/x-ray) and a beta/gamma meter					
(2)	for tracer materials, will be operable and currently calibrated and available to accompany the materials to job-site locations.					
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10	
<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY Every 6 mons. NAME, ADDRESS, AND FREQUENCY Any service company licensed by the NRC or an Agreement State.	<input type="checkbox"/> b. CALIBRATED BY APPLICANT Attach a separate sheet describing method, frequency and standards used for calibrating instruments.

12. PERSONNEL MONITORING DEVICES		
TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
<input type="checkbox"/> (1) FILM BADGE <input checked="" type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) with Neutron Capabilities <input type="checkbox"/> (3) OTHER (Specify): _____ 	Eberline Instrument Corp. Santa Fe, New Mexico, or any other State or Federally approved dosimetry service company.	<input type="checkbox"/> MONTHLY <input checked="" type="checkbox"/> QUARTERLY <input type="checkbox"/> OTHER (Specify): _____

13. FACILITIES AND EQUIPMENT (Check were appropriate and attach annotated sketch(es) and description(s).
<input checked="" type="checkbox"/> a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC. Figure #4 of Manual <input checked="" type="checkbox"/> b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. Figure #5 of Manual <input checked="" type="checkbox"/> c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC. <input type="checkbox"/> d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

14. WASTE DISPOSAL
a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED Tracer waste paraphernalia will be disposed of as described Sec. VII of manual.
b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE. Sealed sources will be turned to the manufacturer or transferred to a commercial waste disposal service.

INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

Please reference enclosed Operating & Emergency Procedures Manual.

15. **RADIATION PROTECTION PROGRAM.** Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures (*if needed*), day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.
16. **FORMAL TRAINING IN RADIATION SAFETY.** Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.
 - a. Principles and practices of radiation protection.
 - b. Radioactivity measurement standardization and monitoring techniques and instruments.
 - c. Mathematics and calculations basic to the use and measurement of radioactivity.
 - d. Biological effects of radiation.
17. **EXPERIENCE.** Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

18. CERTIFICATE

(This item must be completed by applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 30, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

WARNING.—18 U.S.C., Section 1001; 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.

a. LICENSE FEE REQUIRED (See Section 170.31, 10 CFR 170) <div style="text-align: center;">Well Logging</div>	b. CERTIFYING OFFICIAL (Signature) <div style="text-align: center;"><i>Robert C. Bales</i></div>
(1) LICENSE FEE CATEGORY: Category 5	c. NAME (Type or print) <div style="text-align: center;">Robert C. Bales</div>
(2) LICENSE FEE ENCLOSED: \$ 700.00	d. TITLE <div style="text-align: center;">Radiation Protection Officer</div>
	e. DATE <div style="text-align: center;">June 20, 1984</div>

R E S U M E

October, 1982

ROBERT C. BALES
806 Willow Run
Yukon, Oklahoma 73099
(405) 354-8964

Date of Birth: October 20, 1955

Social Security No.: 514-62-3464

EXPERIENCE:

- 1/78 - 3/80 ---- Employed by Dresser-Atlas, Perry, Oklahoma, as a rigger, where he handled sealed sources of 3 and 5 Ci AmBe-241 under supervision.
- 3/80 - 9/81 ---- Employed by Gearhart, in Oklahoma, as a well logging engineer, utilizing sealed sources of 3 and 5 Ci AmBe-241.
- 9/81 - 9/82 ---- Employed by Tom Hansen Company in Oklahoma City, Oklahoma and College Station, Texas, as a well logging engineer, using Iodine-131 tracer materials, Iridium-192 radioactive sand, and Radium-226 Calibrator sources of 20 uCi.
- 9/82 - present - Employed by MIDCO, Inc., Moore, Oklahoma, and will serve as the Radiation Protection Officer.

RADIATION SAFETY TRAINING:

In October, 1980, while employed by Gearhart, Mr. Bales received radiation safety training taught by Frank Malek of Gulf Nuclear, Inc., Houston, Texas (Certificate attached).

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Certificate

This certificate indicates that ROBERT C. BALES
has satisfactorily completed an instruction and handling training course for Radiation
Safety for oil well logging.

OCTOBER 23, 1980

Date

Gulf Nuclear, Inc.
Houston, Texas

Frank Malik

Instructor

Walter P. Peoples, Jr.

Walter P. Peoples, Jr.
President

RADIATION SAFETY TRAINING MANUAL

OPENING STATEMENT:

It is the objective of this training program to train and qualify well logging personnel in the proper use and handling of radioactive materials, to reduce hazard to other personnel at job sites, as well as to take a leadership role in promoting good health physics practices in order to keep exposure to radioactive materials as low as is reasonably achievable.

The contents of this manual will serve as the basis for the training and will be taught by a State or Federally approved instructor in lecture sessions. This training will consist of no less than 16 hours of classroom instruction. If additional materials or training aids are presented, they will be referenced in the training files. The individual must pass a written examination (see example at rear of manual) with a minimum grade of 70. A certificate will be issued to each individual who successfully completes the training. In lieu of this in-house training, an individual may present proof (certificate and/or test) that he has received equivalent radiation safety training in a course approved by the State or Federal Agency for control of radiation.

In addition to the Radiation Safety Course described above, each individual will read and receive instruction in the rules and regulations appropriate to our radioactive material license, and our Operating & Emergency Procedures Manual. The individual will receive on-the-job training under the personal supervision of a logging supervisor, in the use of sources of radiation and/or tracer materials, related handling tools, and radiation survey instruments which will be used in his work assignment. This training under supervision will be at least 8 hours actual handling time and 90 days on-the-job. If this training was received under another company's employ, we will obtain a signed resume of experience from the individual.

After the individual has successfully completed and demonstrated his understanding and competence in the areas above described, the Radiation Safety Officer, under the authority of the license, will designate the individual as a radiation handler. Records to support each individual's qualifications as a radiation handler will be maintained in the radiation training files.

MEMO TO TRAINING FILE:

Name: _____.

Social Security Number: _____.

Date of Birth: _____.

In accordance with radiation safety training requirements, the above named employee has completed the following:

1. Approved Radiation Safety Training Course:

Date: _____.

Instructor: _____.

Certificate attached? _____ Test? _____.

2. Read and received instruction in the rules and regulations appropriate to our license (10 CFR Energy -- Parts 19, 20, and 71) and our Operating & Emergency Procedures Manual.

3. Received on-the-job training, under the personal supervision of a logging supervisor, in the use of sources of radiation, related handling tools, and radiation survey instruments which will be used in his work assignment. (Approximately _____ hours training)*

_____ has demonstrated his understanding of and competence in the areas above described, and under the authority granted in our Texas license number _____, I hereby designate him as a radiation handler.

Date: _____.

By: _____
Radiation Safety Officer

I hereby acknowledge that I have completed above described training.

Date: _____.

Employee's Signature

* If this training was received under another company's employ, obtain a resume of experience from the employee and attach it to this memo.

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MIDCO, INC.

OPERATING AND EMERGENCY
PROCEDURES MANUAL