

OGLE PETROLEUM INC.

Return to URFO 467-5  
40-8745  
PDR

TELEPHONE (307) 266-6456  
TELECOPY (307) 266-6459

150 NORTH NICHOLS AVENUE  
CASPER, WYOMING 82601



October 4, 1982



John J. Linehan, Section Leader  
Operating Facility Section I  
Uranium Recovery Licensing Branch  
Division of Waste Management  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

RE: License Amendment No. 3  
Source Material License  
No. SUA-1396  
Docket No. 40-8745

Subject: Health Physics Training for RSO

Dear Mr. Linehan:

License Amendment No. 3 states that the Radiation Safety Officer (RSO) for the Bison Basin Project must complete the Specialized Health Physics Training by December 31, 1982. Ogle Petroleum's RSO needs two weeks of formalized instruction in health physics in order to fulfill the four weeks training requirement.

Ogle Petroleum Inc. (OPI) conducted an extensive search to locate health physics courses of sufficient length to meet the requirement of License Condition No. 3. To date we have only been able to find one course being offered before December 31, 1982 that we feel meets the NRC requirements. The course is one week in length. The course title is "Radiation Protection" and is being put on by Engineering Technology, Inc. in Anaheim, California during the period October 25th through the 29th, 1982. The OPI RSO is registered for the above course. A brochure that includes a course outline is enclosed.

At the completion of the October 25-29, 1982 course in Anaheim, our RSO will still be short one week of formalized health physics training. It is requested that the NRC advise OPI as to what action we should take to try and fulfill the training requirement of Amendment No. 3. In the event no other suitable

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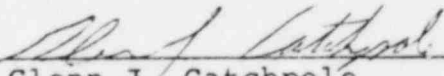
DESIGNATED ORIGINAL

Certified By B. Fisher

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course is offered this year, we suggest a six month extension of the training date deadline. The results of the recent inspection of OPI's Bison Basin Mine by the NRC Region IV I & E staff documents the fact that we currently have a sound radiation safety program.

Sincerely,  
OGLE PETROLEUM INC.

  
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Glenn J. Catchpole  
Vice President and Uranium  
Project Manager

GJC:me

cc: Document Management  
Branch, NRC (W/Enc.)

## PREREQUISITES

Students should have a general understanding of Elementary Chemistry, Atomic Structure, and Physics, and should be able to perform simple Algebraic Calculations, including Logarithmic and Exponential functions.

## CERTIFICATE

A certificate of completion will be awarded by Engineering Technology, Incorporated.

Those participants successfully completing the course requirements are awarded 3 Continuing Education Units (CEUs).

The CEU is the national standard for recognition of non-university professional education. It has been adopted by extension service divisions of over 600 colleges, by numerous professional associations, and by other specialized educational groups. A permanent record of CEU awarded is maintained by Engineering Technology, Inc.

## REGISTRATION

RADIATION PROTECTION will be offered on two occasions in 1982 during the periods of July 26-30, 1982, Los Alamos, NM, and October 25-29, 1982, Anaheim, CA. The \$650.00 fee for each five-day course includes the course tuition, course text and notes (copies of results), meeting materials, and break refreshments. Registrations may be made by telephone and later confirmed by submitting the attached registration form and mailing it to:

SHORT COURSE DIRECTOR  
ENGINEERING TECHNOLOGY, INC.  
P. O. BOX 9000  
WACO, TX 76710 or Telephone (817) 772-0082

Payment of registration fees is required, although payment the first day of the course is acceptable. Registration fees may also be billed provided an authorized purchase order form is received prior to course commencement. Make checks payable to: ENGINEERING TECHNOLOGY, INC.

**CANCELLATION POLICY:** Registrants who cancel more than one week prior to the course are not subject to the course registration fee or service charge. Registrants whose cancellations are received 1-5 working days prior to the course are subject to a \$50.00 cancellation fee. Registrants failing to cancel prior to course commencement are subject to the entire registration fee but will receive the text and course notes. Substitutions may be made at any time.



# RADIATION PROTECTION COURSE OUTLINE

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
MORNING SESSION 8:00 AM - 12:00 NOON	<b>RADIATION PHYSICS</b> Atomic and Nuclear Structure <ul style="list-style-type: none"> <li>The Nuclear Atom</li> <li>Nuclear Forces and Stability</li> <li>Mass-Energy Relationships</li> <li>Introduction to Radioactivity</li> <li>Radioactive Decay and Half Life</li> <li>Fundamental Decay Law</li> <li>Specific Activity</li> <li>Types of Radioactivity</li> <li>Decay Schemes</li> <li>Chart of the Nuclides</li> <li>Natural Radioactivity</li> </ul>	<b>BIOLOGICAL EFFECTS OF RADIATION</b> Understanding Radiation Effects <ul style="list-style-type: none"> <li>Linear and Threshold Effects</li> <li>Radio-sensitivity</li> <li>Direct and Indirect Effects</li> <li>Acute Effects</li> <li>Delayed Effects</li> <li>Somatic and Genetic Effects</li> </ul> <b>RADIATION PROTECTION STANDARDS AND MONITORING</b> Maximum Permissible Radiation Exposures Personnel Monitoring Techniques	<b>LEGAL BASES OF RADIATION CONTROL</b> Code of Federal Regulations State Regulations <b>PERSONNEL MONITORING</b> Personnel Dosimeters Internal Dose Determinations	<b>APPLIED RADIATION CONTROL</b> Operations with Radioactive Materials Shielding Working with Radioactive Material Basic Radiation Principles Laboratory Practices Procedures Contamination Control Biological Effects	<b>ENVIRONMENTAL MONITORING</b> Philosophy Radiological vs. Non-Radiological Radiological Parameters Evaluation of Results <b>EMERGENCY RESPONSE</b> Emergency Planning Emergency Exercises Management of an Emergency Situation
AFTERNOON SESSION 1:30 PM - 5:00 PM	<b>RADIATION PHYSICS (cont.)</b> Radiation Interactions with Matter <ul style="list-style-type: none"> <li>Ionization and Excitation</li> <li>Charged Particle Interaction</li> <li>X-Ray and Gamma-Ray Interaction</li> <li>Production of X-Rays</li> <li>Characteristic X-Rays</li> <li>Bremsstrahlung</li> </ul>	<b>RADIOLOGICAL UNITS</b> Exposure (The Roentgen) Dose (The Rad, Gray) Dose Equivalents (Rem, Sievert, OF, LET) Activity (Curie, Becquerel) <b>RADIATION PROTECTION STANDARDS</b> Maximum Permissible Dose and Concentration Radiation Concentration Guidelines Standards Process	<b>MEASUREMENT OF RADIATION</b> Radiation Detectors Radiation Monitoring Techniques Radioactivity in Air and Water Portable Survey Instruments	<b>RADIOACTIVE WASTE DISPOSAL</b> Sources of Radioactive Waste Gaseous Waste Treatment Systems Liquid Waste Treatment Systems Waste Management in the Nuclear Fuel Cycle Disposal of Radioactive Waste	

## ROOM RESERVATIONS

The following hotels/motels have reserved blocks of guest rooms for course participants until two weeks prior to the course offerings. We recommend you contact the hotel directly and specify that you are attending the Engineering Technology, Inc. short course. This will assure that you receive the indicated rate. Room reservations, meals, and hotel charges are the responsibility of the individual course participant.

July 26-30, 1982  
HILLTOP HOUSE  
Trinity at Central  
Los Alamos, NM 87544  
Phone: (505) 662-2441

October 25-29, 1982  
ANAHAIM  
C/JALITY INN/ANAHEIM  
815 Convention Way  
Anaheim, CA 92801  
Phone: (714) 750-3131

FACULTY

DR. RICHARD V. GRIFFITH, Division Leader, Special Projects Division, Lawrence Livermore National Laboratory (LLNL). Dr. Griffith has over 20 years of experience in Applied Health Research Center, Health Analysis and Control, and Biophysical Research related to nuclear dosimetry/epidemiology and the epidemiology of tissue-equivalent materials for radon measurement. In his previous capacity as a Senior Investigator, Health Control Department, LLNL, Dr. Griffith's specialties include: Radiation Dosimetry, Neutron Spectrometry, Whole Body Counting and Calibration, and Nuclear Charge Particle Track Detectors. His current research efforts include the development of a Neutron Dosimeter/Spectrometer for the Department of Energy and the development and fabrication of a set of radon detectors for the International Atomic Energy Agency. He is a member of the Health Physics Society, a Chairman of the International Atomic Energy Agency (IAEA) Health Physics Subcommittee, a member of the Atomic Energy Agency (AEA) Health Physics Subcommittee, and the publisher of an IAEA Technical Report (NSR-70-020) published in 1975. He is currently working as a Technical Advisor to the Health Physics Society, working on a project to develop a Neutron Dosimeter/Neutron Energy Loss (NDEL) 20 MeV and a Fast Standards Committee. Dick is the author of numerous papers documenting his research efforts which have been published in professional journals and technical proceedings of the International Atomic Energy Agency, Symposia and the International Congress of the International Radiation Protection Association. Dick will lecture in both Radiation Protection course offerings.

DR. ARTHUR E. DESROSIERS, Ph.D., Harvard University. As a Senior Research Scientist, Bartlett-Northwest Laboratory, Dr. Desroisers conducts research in occupational and environmental standards, risk analysis, and radioactive disposal. He is experienced in the evaluation of joblog monitoring equipment for atomic energy and the determination of internal dosimetry models. He has led radiation survey teams in the study of work habits which had led to unnecessary exposures in the transportation of radionuclides. While at Yankee Atomic Electric Company, Dr. Desroisers developed environmental radiological surveillance programs and provided specifications for radon surveillance. Dr. Desroisers also provides Nuclear Engineering and Environmental Health Sciences at Harvard University. Art will lecture in the Radiation Protection course in Anaheim, California.

ABIH CERTIFICATION

ABIH Maintenance Certification credits are awarded to participants successfully completing this course

COURSE DESCRIPTION

RADIATION PROTECTION is a one week, intensive course designed to provide an overview of the basic scientific and engineering principles underlying radiation protection. The course is primarily descriptive, with a minimum of mathematics or theoretical rigor. This course will be of particular value to practicing safety professionals, engineers, and technical managers who may be involved with radiation protection in an auxiliary or management role, as well as to radiation protection technicians, radiographers, researchers, and others who work with ionizing radiations and radioactive materials. Topics to be discussed include:

- Atomic Structure and Radioactivity
- Radioactive Decay
- Production of X-Rays
- Biological Effects of Radiation
- Radiation Protection Standards
- Legal Bases of Radiation Control
- Radiation Units
- Measurement of Radiation
- Personnel Monitoring
- Operations with Radioactive Materials
- Contamination Control
- Disposal of Radioactive Wastes

FACULTY

DR. GEORGE H. NICKEL, Ph.D., Applied Science and Engineering University of California at Davis, and Masters Degree, Nuclear Engineering, University of Illinois. Dr. Nickel's 22 years of experience in nuclear engineering includes calculation of reactor criticality at the General Atomic Company and nuclear weapon research at the Los Alamos and Lawrence Livermore National Laboratories of the Department of Energy, the U.S. Air Force Weapons Laboratory, and the Air Force Technical Applications Center. He was an active participant in the last atmospheric nuclear test series in 1962 where he investigated very high altitude nuclear detonations using both experimental data and theoretical models and has studied techniques for the detection of atomic tests.

Dr. Nickel is currently on the Los Alamos National Laboratory staff where he conducts research on thermoelectric applications. Prior to his current position, he was an Associate Professor of Nuclear Engineering, Physics Department, Air Force Institute of Technology (AFIT) where he received graduate degrees of master and senior government civilian personnel on the subject of nuclear weapons, his teaching experience also included the Florida Institute of Technology, and the Brewer Community College in Cocoa, Florida.

George has written numerous published technical papers and holds one patent. George will lecture in the Radioactive Waste Management Course in Los Alamos, New Mexico.

# RADIATION PROTECTION

SHORT COURSE

Developed and Conducted by  
ENGINEERING TECHNOLOGY, INC.  
D. Box 9000  
Waco, TX 76710  
(717) 772 0082

LY 26 J0, 1982  
S ALAMOS, NM

TOBER 25-29, 1982  
FAHEIM, CA

TECHNICAL INSTRUCTIONAL MODULES PROVIDED BY  
EPA FOR OCCUPATIONAL RESEARCH AND DEVELOPMENT