

# CONSOLIDATION COAL COMPANY

NORTHERN APPALACHIAN EXPLORATION  
SECOND FLOOR-6451 PLEASANT STREET  
LIBRARY, PENNSYLVANIA 15129  
TELEPHONE 412 / 831-8538



November 3, 1983

U. S. Nuclear Regulatory Commission  
Attn: Mr. James Nicolosi  
631 Park Avenue  
King of Prussia, PA 15406

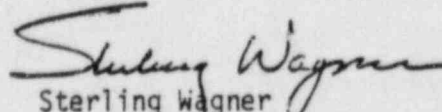
Dear Mr. Nicolosi:

In accordance with your request the week of October 24, please find attached a copy of the plot plan map for Consol's Jollytown clean-up site. The scale of the attached map is 1" = 50'. The map specifically designates areas which were found to be contaminated and were excavated and cleaned-up during our work program. Areas designated in yellow were contaminated areas along the stream and adjacent bank along with areas around the drill hole site and TDF Building; which Consol presently owns. Areas designated in orange were contaminated areas along the stream bank which are on the adjacent Wilbur Hibbs property.

Also designated are areas where Consol excavated burial trenches (trenches #1 thru #22) where soil materials well below the 30pC/g limit were disposed.

The attached map should assist you in estimating the area which your office or sub-contractors will perform the final survey in order to release the site for unrestricted use. Please contact me should you require additional information.

Sincerely,

  
Sterling Wagner  
Resident Exploration Mgr.

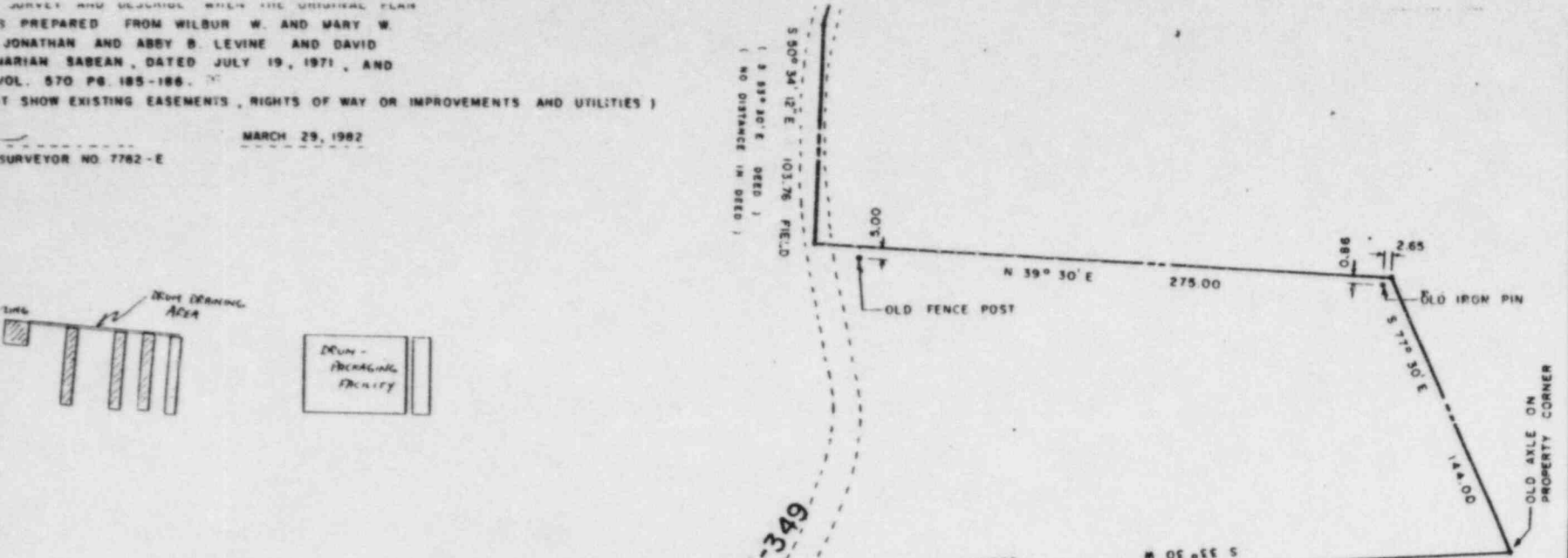
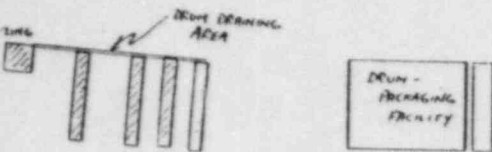
SW/al

attachment

SURVEY AND RECORD WHEN THE ORIGINAL PLAN  
S PREPARED FROM WILBUR W. AND MARY W.  
JONATHAN AND ABBY B. LEVINE AND DAVID  
MARIAH SABEAN, DATED JULY 19, 1971, AND  
VOL. 570 PG. 185-186.  
(IT SHOW EXISTING EASEMENTS, RIGHTS OF WAY OR IMPROVEMENTS AND UTILITIES)

MARCH 29, 1982

SURVEYOR NO. 7782-E



PLAN OF PROPERTY

SITUATE

GILMORE TWP. GREEN CO., PA.

SURVEYED FOR

CONSOLIDATION COAL CO.

MARCH 1983

SCALE 1" = 50'

EDKINS - SURVEYING  
100 UNION STREET  
BRIDGEVILLE, PA 15017  
412-221-2848

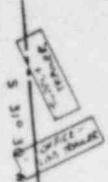
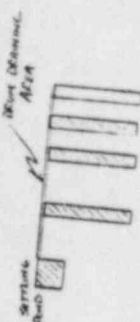
C-380

WAS ATTEMPTING TO SURVEY AND DESCRIBE WHEN THE ORIGINAL PLAN  
AND DESCRIPTION WAS PREPARED FROM WILBUR W. AND MARY W.  
HIBBS TO JOSEPH JONATHAN AND ABBY B. LEVINE AND DAVID  
WARREN AND RUTH MARIAN SABENN, DATED JULY 19, 1871, AND  
RECORDED IN D. B. VOL. 570 PG 185-186.  
( THIS PLAN DOES NOT SHOW EXISTING EASEMENTS, RIGHTS OF WAY OR IMF

MARCH 29, 1882

T. E. EDKINS - REG. SURVEYOR NO 7782-E

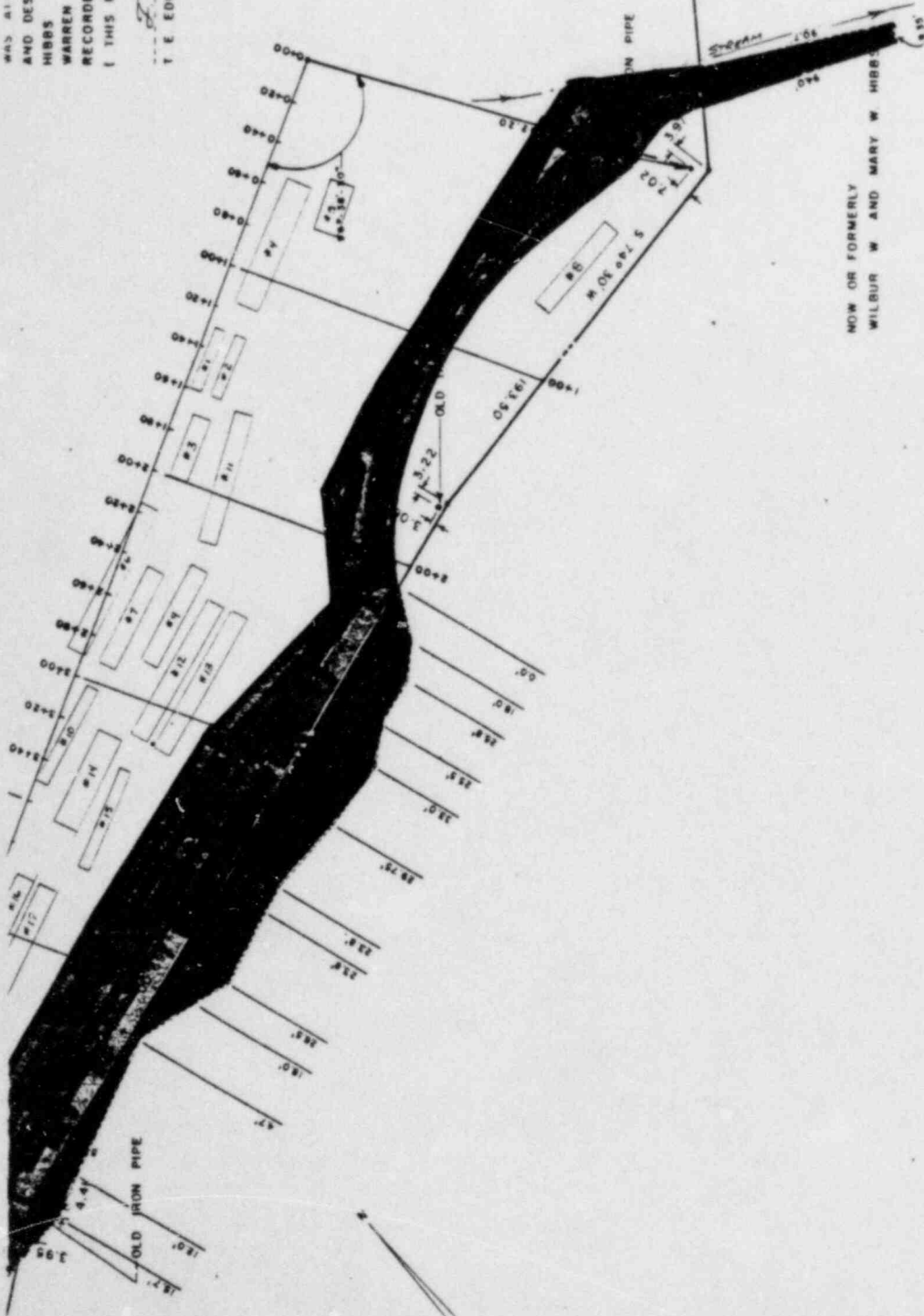
Now -  
Hibbs  
Levine  
Warren

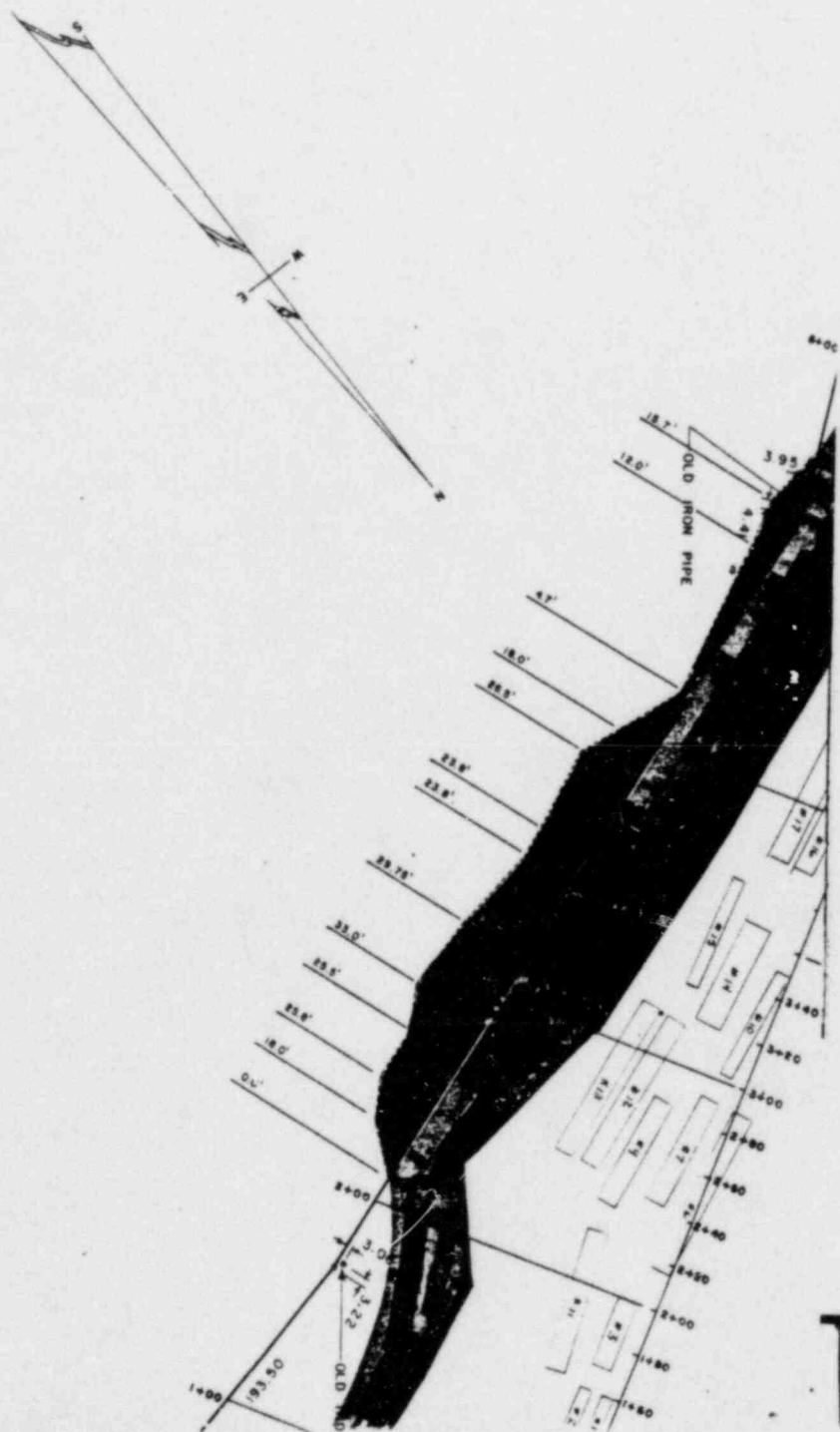


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IRON PIPE

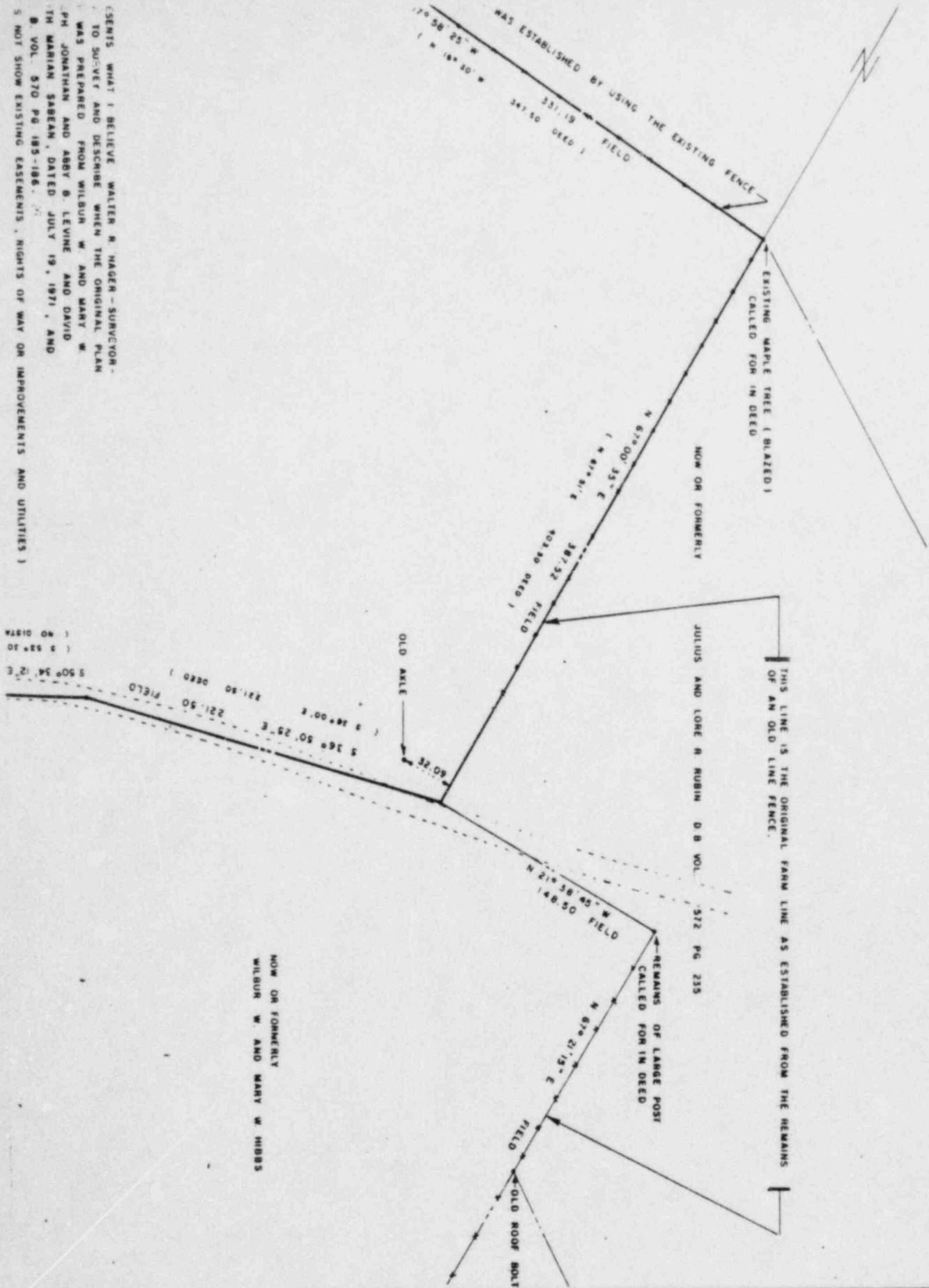
Now or formerly  
WILBUR W. AND MARY W. HIBBS



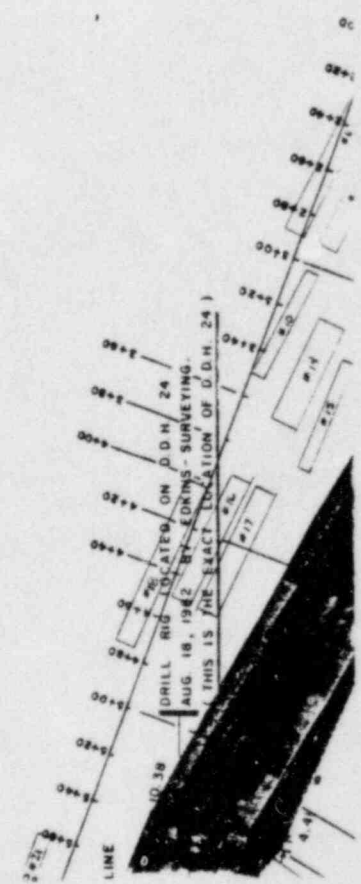
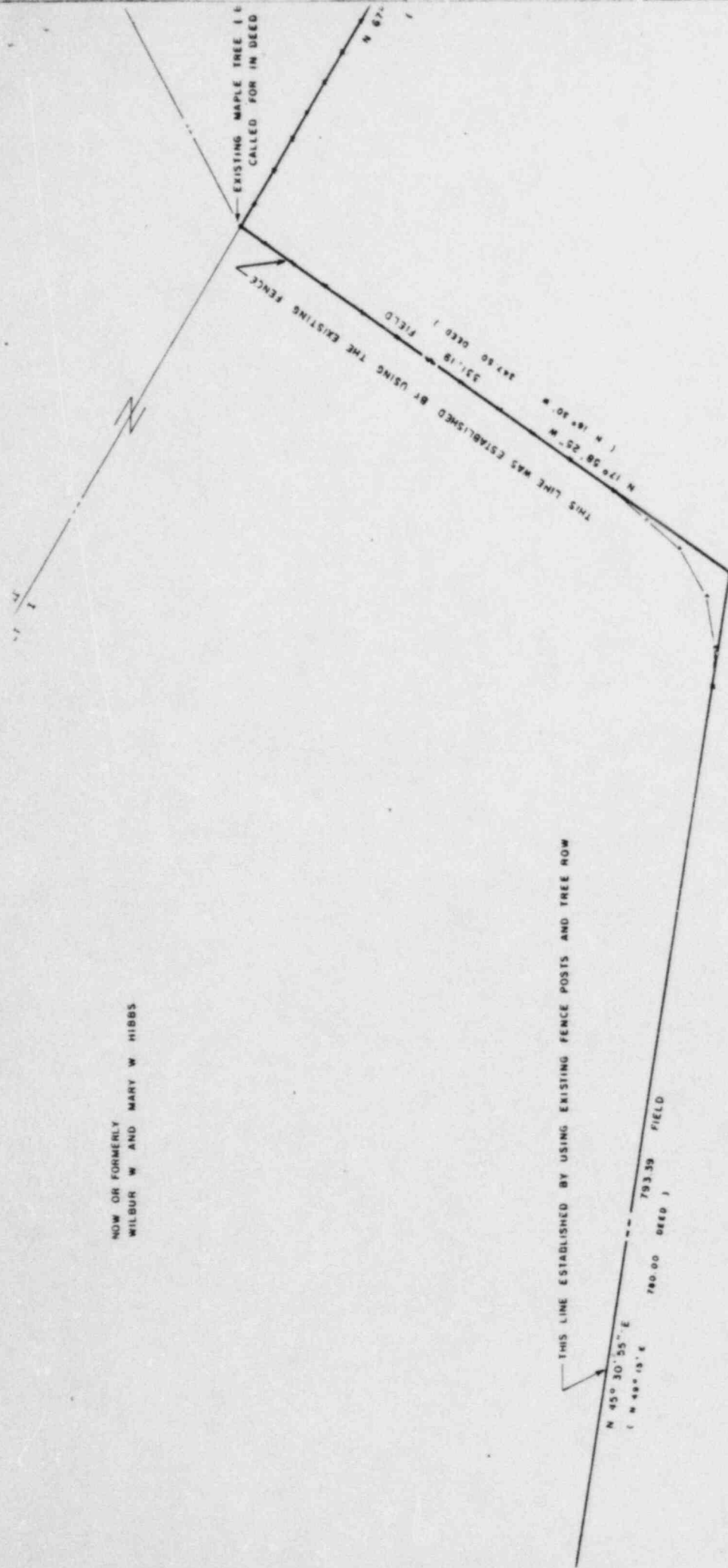




50° 34' 12" N  
153° 53' 10" W  
1510 ON 1



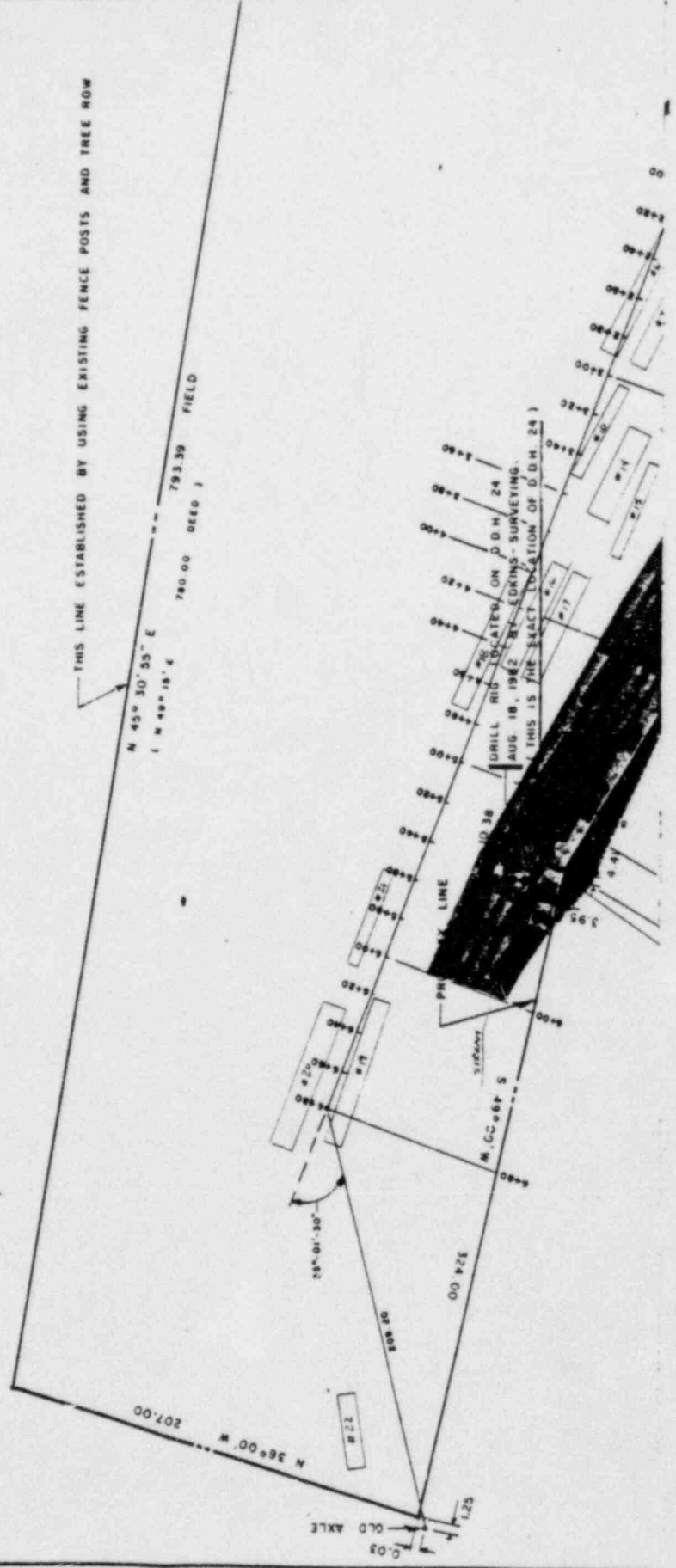
NOW OR FORMERLY  
WILBUR W AND MARY W HIBBS



THIS PLAN REPRESENTS WHAT I BELIEVE WALTER R. HAGER - SURVEYOR - WAS ATTEMPTING TO SURVEY AND DESCRIBE WHEN THE ORIGINAL PLAN AND DESCRIPTION WAS PREPARED FROM WILBUR W. AND MARY W. HIBBS TO JOSEPH JONATHAN AND ABBY B. LEVINE AND DAVID WARREN AND RUTH MARIAN SABEAN, DATED JULY 19, 1971, AND RECORDED IN D.B. VOL. 870 PG. 185-186.

( THIS PLAN DOES NOT SHOW EXISTING EASEMENTS, RIGHTS OF WAY OR IMPROVEMENT )

NOW OR FORMERLY  
WILBUR W AND MARY W HIBBS



Docket No. 30-12023

22 AUG 1983

License No. 37-16998-01

Consolidation Coal Company  
 ATTN: Sterling Wagner  
 Resident Exploration Manager  
 Second Floor - 6451 Pleasant Street  
 Library, Pennsylvania 15129

Gentlemen:

This refers to your letter dated July 11, 1983, in response to our letter dated June 27, 1983. From your letter, we understand that you do not plan to pursue your request to change the decontamination limits for americium-241 at the Jollytown, Pennsylvania site, as described in your May 20, 1983 letter to this office, and will continue to comply with the decontamination limits specified in our September 3, 1982 letter to you. If your understanding is different from ours, please notify this office in writing within seven days of receipt of this letter.

We will continue to monitor your decontamination efforts at the Jollytown, Pennsylvania site. If you have any further questions, we will be pleased to discuss them with you.

Sincerely,

Original Signed By:  
 J. H. Joyner

Thomas T. Martin, Director  
 Division of Engineering and  
 Technical Programs

cc w/encl:  
 Public Document Room (PDR)  
 Nuclear Safety Information Center (NSIC)  
 Commonwealth of Pennsylvania

bcc w/encl:  
 Region I Docket Room (w/concurrences)

RI:DETP  
 Nicolosi:as  
 8/18/83

JPH Sum  
 RI:DETP  
 Kinneman

JPH  
 RI:DETP  
 Joyner  
 8/18/83

JPH  
 RI:DETP  
 for Martin  
 8/18/83

~~83 083 00757~~

TE07

# CONSOLIDATION COAL COMPANY

NORTHERN APPALACHIAN EXPLORATION  
SECOND FLOOR-8451 PLEASANT STREET  
LIBRARY, PENNSYLVANIA 15129  
TELEPHONE 412 / 831-6538



July 11, 1983

U.S. Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406  
ATTN: Thomas T. Martin

Dear Mr. Martin

Subject: Decontamination of Jollytown, Pennsylvania Site  
Docket No 30-12013 License No. 37-16998-01

In reference to Consolidation Coal Company's request of May 20, 1983 to raise certain release limits at the Jollytown Site, this office has received and reviewed the response from the NRC on June 27, 1983. Consolidation Coal Company in conjunction with B.J. Williams (Conoco) have elected not to pursue any further changes in the release limits of Americium-241 contaminated soils. Consolidation Coal Company is proceeding with cleanup and containment of the Jollytown Site under the original contamination level guidelines established by the NRC in the September 3, 1982 letter.

The additional information and details requested by the NRC before considering any changes in release levels would require excessive time and costs which would at best employ very crude assumptions and estimates. It is in the best interest of completing the cleanup at the Site as soon as possible that Consol has elected to proceed under the original specified guidelines.

Very good progress is presently being made at the Site in containing the contaminated soils. To date, approximately 30%-35% of the restricted area has been cleaned. This office has been in contact with Mr. James Nicolosi indicating that Consol expects the final survey of the restricted site area to be complete by early September. We will keep Mr. Nicolosi advised of our progress so that he can schedule a time table to complete his own independent final survey.

Sincerely;

cc: P.H. Bond  
B.J. Williams  
J. Nicolosi

*Sterling Wagner*  
Sterling Wagner  
Resident Exploration Mgr.

~~83-834765~~



11 AUG 1983

Docket No. 30-12023

License No. 37-16998-01

Consolidation Coal Company  
ATTN: Mr. Sterling Wagner  
Resident Exploration Manager  
Second Floor, 6451 Pleasant Street  
Library, Pennsylvania 15129

Gentlemen:

This refers to your letters of April 20, 1983, and April 27, 1983, concerning your proposed changes in the decontamination operation near Jollytown, Pennsylvania. It appears that your proposed changes are adequate to assure that the decontamination operation will be performed in a safe manner. When Dr. Courtney's review is complete, we would appreciate a copy of his findings.

We will continue to monitor, evaluate, and verify your decontamination activities during future site inspections.

No reply to this letter is required. Your cooperation with us in this matter is appreciated.

Sincerely,

Original Stamped 371

*John D. Kinneman*  
Thomas T. Martin, Director  
Division of Engineering and  
Technical Programs

cc:

Public Document Room (PDR)  
Nuclear Safety Information Center (NSIC)  
Commonwealth of Pennsylvania

bcc:

Region I Docket Room (with concurrences)

RI:DETP

Nicolosi/dmg  
6/25/83  
21

RI:DETP

Kinneman  
8/10/83

OFFICIAL RECORD COPY

~~3309060246~~ 830811  
NMS LIC30  
37-16998-01 PDR

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# CONSOLIDATION COAL COMPANY

NORTHERN APPALACHIAN EXPLORATION  
SECOND FLOOR-6451 PLEASANT STREET  
LIBRARY, PENNSYLVANIA 15129  
TELEPHONE 412 / 831-6538



April 20, 1983

U.S. Nuclear Regulatory Commission  
Attn: Mr. James Nicolosi  
631 Park Avenue  
King of Prussia, PA 19406

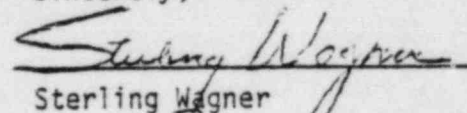
Dear Mr. Nicolosi:

In accordance with your request shortly after the termination of Applied Health Physics by Consol at the Jollytown Site, I have enclosed a copy of a Conoco memo indicating the type of instrumentation and counting efficiencies presently on site. You may already have been advised by B.J. Williams of this instrumentation; however, the attached memo is being provided for your formal records and files.

Additional field instrumentation is being prepared by Conoco for use at the Site; and I will keep your office informed on additional equipment and/or procedures.

I am also assembling an updated work plan for the site and will be forwarding this under separate cover to you. B.J. Williams has been assigned "Radiation Safety Officer" for the project, with David Stacey, Conoco, being the on-site assistant "Radiation Safety Officer". The work plan will include a history of radiation experience for each individual assigned to the project.

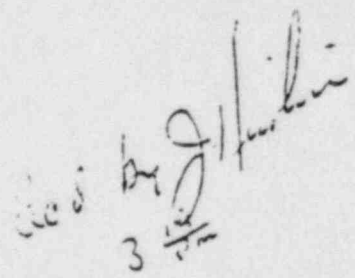
Sincerely;

  
Sterling Wagner

attachment

cc: P.H. Bond

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22 APR 1983

## Interoffice Communication

To ~~Stanley Wagner~~  
 From M. R. Farnsworth  
 Date April 8, 1983  
 Subject Instrumentation At The Jollytown Site

The instrumentation that we plan to use at the Jollytown site to analyze samples and evaluate the Am-241 cleanup is listed below. The counting efficiencies for each instrument is also listed.

For assaying soil or water samples, we will use:

An EG&G Ortec model 7030 Data Acquisition and Analysis system with a Bicorn 4" NAI (TI) detector, model 4H4/5. The detector is housed in a 1.5" lead shield. The sample geometry we will use is a metal quart paint can filled with 3.5" of soil (roughly 1000 gm.), tapped down and placed directly on top of the NAI detector. The counting efficiency with this geometry is 1.3% (# of net cpm in region of interest divided by dpm in can). For water samples using the same geometry, the efficiency is 1.75%.

For counting smears, we will use:

An Eberline model FC-2 proportional gas flow counter in the windowless mode connected to a Ludlum model 2201 portable scaler ratemeter. For the proportional gas we are using argon with the hi-voltage set at 1200 volts. The alpha counting efficiency is 50%.

Additional instrumentation on the site:

1. One Ludlum model 2200 portable scaler ratemeter with a window set at 45-75 kev with a Bicorn 1.5" thin window NAI detector, model 1.5xMC80A. Counting efficiency is 9% at 1/4" or 5% at 1/2".
2. One Eberline portable air sampler model RAS-1 with 0.8 micron millipore filters.
3. One Eberline model E-530 with a side window GM probe.
4. Two Eberline PAC ISAG meters with AC-3 alpha scintillation detectors.
5. Two Eberline RPM-5 meters with PG-2 thin window NAI detectors. They were left for CONSOL'S use.

Item 4 and 5 are on loan from the state of Pennsylvania. Other instrumentation is now being prepared for site use.

*Mark R. Farnsworth*  
 Mark R. Farnsworth  
 Radiochemistry Group

CC: RMT FK HHE BJW

# CONSOLIDATION COAL COMPANY

NORTHERN APPALACHIAN EXPLORATION  
SECOND FLOOR-8451 PLEASANT STREET  
LIBRARY, PENNSYLVANIA 15129  
TELEPHONE 412 / 831-6536



April 27, 1983

U. S. Nuclear Regulatory Commission  
Attn: Mr. James Nicolosi  
631 Park Avenue  
King of Prussia, PA 15406

Dear Mr. Nicolosi:

As I indicated in my previous April 20 letter; please find attached an updated, general work plan for Consol's ongoing decontamination work at the Jollytown site. Also included are resumes of radiation experience of individuals assigned the responsibilities of "radiation safety" for the project.

Since the termination of Applied Health Physics as consultant on the project, Consol and Conoco have implemented efforts to secure the contaminated areas, develop specific decontamination procedures, and set-up on-site equipment for analyzing and identifying Americium contamination.

During the period of April 7 to April 14, the perimeter of the site was protected from surface water run-off by completing diversion ditches and installation of drain pipes. All existing soil piles identified to have various levels of Americium contamination were also lined ( $\text{Ca CO}_3$ ) and covered with plastic sheets so as to limit rainwater saturation and further spread of contamination. A water sampling program was also implemented so as to provide interium monitoring of water flowing from the site. No significant levels of Americium have been detected to date from the water sampling program. A boundary trailer has also been installed so as to develop specific entry and exit procedures from the restricted area. Plans are being prepared to begin mapping and gridding the contaminated area, and survey contamination levels so as to progress with the containment of remaining contaminated soil.

In light of the existing drum problem caused by Applied Health Physics; Consol has installed a truck trailer facility to begin a detailed program to inspect all existing drums and correct packaging deficiencies. The on-site Consol & Conoco technicians are also re-analyzing soil samples previously analyzed by Applied Health Physics to verify sampling analysis results. Presently, based upon those soil samples re-analyzed to date,

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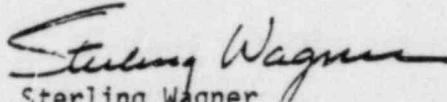
Mr. James Nicolosi  
Page 2  
April 27, 1983

there seems to be deficiencies in the Applied Health Physics results and analysis procedures. Documentation of sampling results are being recorded in an on-site ledger by Consol.

On April 22, B. J. Williams conducted a further "radiation safety training" lecture with all individuals presently engaged with work at the site. Furthermore, on Saturday, April 23, Conoco retained Dr. John Courtney, LSU Nuclear Science Center, to physically inspect and review the Jollytown site. Dr. Courtney is in the process of preparing written observations and recommendations of his site review.

Consol will be providing additional, more specific work plans and progress report to the NRC as work progresses at Jollytown. In the meantime should you require additional information or wish to make any recommendations concerning Consol's work please contact me at the Library Exploration office (412) 854-6562 or Chuck Yurchick at the site (412) 451-8396.

Sincerely,

  
Sterling Wagner  
Resident Exploration Mgr.

SW/al

attachments

cc: P.W. Bond  
B.J. Williams  
R.L. Wooten  
C.W. Yurchick



In order to re-establish reasonable estimates of time and procedures for decontaminating the Jollytown contamination site, several changes have been made. Applied Health Physics, Inc. is no longer associated with this project. CONSOL, Incorporated will handle the entire operation. An organization outline of responsibilities has been established and is as follows:

Radiation Safety Responsibilities:

CONSOL SAFETY DEPARTMENT

Ronald L. Wooten  
Assistant to Vice President

B. J. Williams  
Radiation Safety Officer

David R. Stacy  
Site Radiation Officer

Dennis R. Deusenberry  
Site Analytical Technician

Decontamination Responsibilities:

Sterling Wagner  
Resident Manager

Charles W. Yurchick  
Site Supervisor

Drum Supervisor  
2-3 Workers

Contamination Area Supervisor  
2-3 Workers

For correcting the existing drum problems:

1. A temporary covered area will be prepared to handle approximately 50 drums.  
Approximate completion date - May 1, 1983 (This task has been completed).
2. Each drum previously prepared will be re-inspected to insure dryness, liner integrity and shipping specifications.
3. Drums presently unacceptable for shipping will be repackaged to D.O.T. and Washington State specifications.
4. All drums will be labeled according to D.O.T. regulations.
5. Shipping will begin as soon as possible, however no sooner than June 1, 1983.

Cleanup of the contaminated area will follow the general outline as specified below:

1. The contamination area will be protected from run-off water by ditching above the site and diverting around the contaminated area. This will include east & west slopes along the site perimeter.  
Completion date - April 15, 1983. (This task has been completed)
2. Resurvey and re-establish radiation contamination areas. Lime and cover with plastic all areas that appear to require decontamination.
3. Redesign the temporary decontamination facility and develop specific entry and exit procedures to the restricted area of the site.
4. Modify temporary decontamination facility for handling, drying, sampling and loading drums.
5. Small areas of contamination will be gathered by shovel by hand. This will not be completed until area is dry.
6. Cleanup of large contaminated areas will begin when the ground is reasonably dry and weather permits a relatively dry collection of contamination.

Estimated completion date - September 1, 1983.

7. Following the decontamination work, the entire area will be resurveyed. If necessary, additional cleanup will be performed.

In addition to the above general outline, a health physics consultant will be retained to assist with the development of more specific procedures. This person will be Dr. John C. Courtney. A resume of his experience is enclosed.

Experience resume's of B. J. William, D. Stacy, and M. Farnsworth are also attached.

## Supplemental Data

Mr. B. J. Williams, Training and Experience

Title - Radiochemistry Group Leader and Radiation Safety Officer, Research Services Division

<u>Training</u>	<u>Where Trained</u>	<u>Duration</u>	<u>On The Job</u>	<u>Formal Course</u>
<u>Type of Training</u>				
a. Principles and Practices of Radiation Protection	Conoco Inc.	14 Years	Yes	No
	Oak Ridge Assoc. Univ.	4 Weeks	Yes	Yes
	Oklahoma State University	1 Semester	No	Yes
	Louisiana State University	1 Week	Yes	Yes
	University of Oklahoma	1 Semester	No	Yes
	North Carolina State Univ.	1 Week	No	Yes
b. Radioactivity Measurement Monitoring Techniques and Instruments	Conoco Inc.	14 Years	Yes	No
	Oak Ridge Assoc. Univ.	4 Weeks	Yes	Yes
	Oklahoma State University	1 Semester	No	Yes
	University of Oklahoma	1 Semester	No	Yes
	North Carolina St. Univ.	1 Week	No	Yes
c. Calculations Basic to the Use and Measurement of Radioactivity	Conoco Inc.	14 Years	Yes	No
	Oak Ridge Assoc. Univ.	4 Weeks	Yes	Yes
	Oklahoma State University	1 Semester	No	Yes
	University of Oklahoma	1 Semester	No	Yes
	North Carolina State Univ.	1 Week	No	Yes
d. Biological Effects of Radiation	Conoco Inc.	14 Years	Yes	No
	Oak Ridge Assoc. Univ.	4 Weeks	No	Yes
	Louisiana State University	1 Week	No	Yes
	Oklahoma State University	1 Semester	No	Yes
	North Carolina State Univ.	1 Week	No	Yes

## Item 9 - Experience with Radioisotopes

Mr. Williams has been listed as user on numerous AEC, NRC, and various state by-product material licenses. In addition, he is currently listed as user and the Radiation Safety Officer on USNRC License Nos. 35-07402-06, 35-07402-07 and 35-07402-11. His experience with radioisotopes has included their application in the following problems:

- Organic Reaction Mechanisms
- Organic Synthesis of Labeled Compounds
- Pipeline Flow Studies, Gases and Liquids, Separately and Simultaneously
- Location of Pipeline Blockages
- Petroleum Reservoir Studies
- Tracer Analysis by Isotopic Dilution
- Percolation Studies in Filter Beds
- Biodegradation Studies, Laboratory Scale
- Catalyst Studies
- Density Measurements

- k. Gamma Back-Scatter Measurements
- l. Uranium Assay
- m. Isotopic Excited X-ray Fluorescence
- n. Radiation Induced Reactions
- o. Biodegradation Reservoir Studies and Flow Patterns
- p. Mineral Exploration
- q. Analysis of Trace Elements

During the past 14 years, Williams has handled the following isotopes in the maximum quantities indicated while employed at the Radiochemistry Laboratory of Conoco Inc:

<u>Isotope</u>	<u>Maximum Activity</u>	<u>Type of Use</u>
Carbon-14	200 mCi	Tracer
Hydrogen-3	200 Ci	Tracer
Sulfur-35	250 mCi	Tracer
Chlorine-36	1 mCi	Tracer
Sodium-22	100 $\mu$ Ci	Tracer
Calcium-45	10 mCi	Tracer
Cobalt-57	500 mCi	Tracer
Cobalt-58	200 mCi	Tracer
Cobalt-60	300 mCi	Tracer
Cobalt-60	10,000 Ci	Sources
Zinc-65	100 mCi	Tracer
Nickel-63	10 mCi	Source
Krypton-85	5 Ci	Tracer
Iodine-131	100 mCi	Tracer
Cesium-137	1,000 Ci	Source
Cesium-137	10 mCi	Tracer
Barium-133	10 mCi	Tracer
Europium-155	10 mCi	Tracer
Mercury-203	50 $\mu$ Ci	Source
Lead-210	50 $\mu$ Ci	Source
Americium-241	10 mCi	Source
Radium-226	5 Ci	Source
Plutonium 238	30 mCi	Source
Antimony-124	1 mCi	Tracer
Cadmium-109	10 mCi	Tracer
Cadmium-109	30 mCi	Source
Indium-114	1 mCi	Tracer
Iridium-192	1 mCi	Tracer
Iron-55	60 mCi	Source
Manganese-54	1 mCi	Tracer
Promethium-147	50 mCi	Source
Strontium-85	2 mCi	Tracer
Strontium-89	2 mCi	Tracer
Strontium-90	10 mCi	Tracer
Chromium-51	10 $\mu$ Ci	Source
Thallium-204	1 mCi	Tracer
Polonium-210	30 mCi	Source



Additional Information

Mr. Williams joined the Research and Development Department of Conoco Inc. in 1956 as an Organic Chemist in the Petrochemical Research Division. Since June, 1968, he has been employed full time in radiotracer work and now is responsible for all radiotracer, radiochemistry and radiation protection for the department. He is Radiation Safety Officer for the Research and Development Department, and Radiochemistry Research Group Leader. He has recently been appointed Radiation Safety Officer for Consolidation Coal Company, a wholly owned subsidiary of Conoco, Inc.

Educational Background

B.S., Eastern Illinois University, 1957 - Chemistry, Mathematics, Physics

M.S., Oklahoma State University, 1966 - Organic Chemistry

Additional - Basic Research Course, Oak Ridge Associated Universities, Oak Ridge, Tennessee, 1968.

Graduate Course at Oklahoma State University - Radiation Chemistry, 1972.

Graduate Course at University of Oklahoma - Nuclear Engineering, 1975.

One-Week Short Courses:

Louisiana State University, "Basic Health Physics," 1973.

North Carolina State University, "Radiation Safety Programs," 1978.

History of radiation experience - David R. Stacy

1970-1971 U. S. Army - Germany  
Installation and maintenance of nuclear warheads on the Nike Hercules missile system.

12/20/71 Applied Health Physics, Inc.  
Started as instrument technician responsible for repair and calibration of all types of portable radiation detection devices.

Under AHP direction, participated in the following projects:

Palisades Nuclear Power Plant - South Haven, Michigan  
Served as a health physics technician for 6 months and as health physics shift supervisor for 7 months during extensive repairs to leaking steam generators and a damaged reactor vessel. Performed alpha, beta, gamma, and neutron surveys, including contamination and air sample analysis with a multi-channel analyzer. Provided health physics safety support to welders, boilermakers, radiographers and plant personnel working in the containment building. This included issuance of radiation work permits. Also responsible for monitoring an underwater reactor repair project.

Ft. Calhoun Nuclear Power Station - Omaha, Nebraska  
Approximately 4 months as a health physics technician during refuelings and steam generator inspections and repairs.

Shippingport Atomic Power Station - Shippingport, Pa.  
Approximately 10 months as a radiation safety technician responsible for contamination and exposure control in a steam generator repair project.

Radiation - Contamination Surveys of:

Flannery Bldg. - Pittsburgh, Pa.  
Extensive Ra 226 contamination of radium processing facility and watch dial painting shop.

Wright Patterson Air Force Base - linear accelerator test facility,

Plastic Surgery Clinic - Ra 226 contamination from a diagnostic radium source.

W. R. Grace - New Jersey - Thorium contamination of factory.

W. R. Grace - Baltimore - contaminated shipyard.

Moly Corp. of America - locating and disposing underground deposits of Thorium.

76-79

Manager of Sales and Service at AHP offices

Repair and calibration of numerous types of survey meters and diagnostic tools. Some of the manufacturers familiar with:

Baird Atomic	Hewlett Packard
Picker	Lucky Strike
Canadian Admiral	Wm. B. Johnson
Victoreen	Smith
Eberline	Nuclear Measurements
Total	Ludlum
Nuclear Chicago	Nuclear Associates
Nucleus	

79-Present Conoco - Coal Research Division

Responsible for leak testing, and surveys of the analytical and process measurement equipment containing radioactive sources here at Library and at several Consol locations.

*David H. Heston*

18

Supplemental Data

Item 16 and 17

Mr. Mark R. Farnsworth, Training and Experience

Title - Associate Chemist, Radiochemistry Group, Research Services Division

Training and Experience

<u>Type of Training</u>	<u>Where Trained</u>	<u>Duration</u>	<u>C. the Job</u>	<u>Formal Course</u>
a. Principles and Practices of Radiation Protection	University of Idaho	4 Months	Yes	Yes
	Westinghouse	10 Months	Yes	Yes
	Argonne National Lab.	21 Months	Yes	Yes
	Conoco Inc.	2 Years	Yes	No
b. Radioactivity Measurement Monitoring Techniques and Instruments	University of Idaho	4 Months	Yes	Yes
	Westinghouse	10 Months	Yes	Yes
	Argonne National Lab.	21 Months	Yes	Yes
	Conoco Inc.	2 Years	Yes	No
c. Calculations Basic to the Use and Measurement of Radioactivity	University of Idaho	4 Months	Yes	Yes
	Westinghouse	10 Months	Yes	Yes
	Argonne National Lab.	21 Months	Yes	Yes
	Conoco Inc.	2 Years	Yes	No
d. Biological Effects of Radiation	University of Idaho	4 Months	No	Yes
	Westinghouse	10 Months	Yes	Yes
	Argonne National Lab.	21 Months	Yes	Yes
	Conoco Inc.	2 Years	Yes	No

Experience with Radioisotopes

- a. Decontamination of Personnel and Equipment
- b. Routine Radiation and Contamination Surveys
- c. Calibration of Radiation Protection Instruments
- d. Radiation and Contamination Control on Radioactive Shipments
- e. Leaking Testing of Sealed Sources
- f. Personnel Radiation Exposure Control
- g. Emergency Response Procedures for Spills, Radiation Alarms, Airborne Radiation Problems and Criticality Alarms
- h. Tracer studies in oil reservoirs

Farnsworth has handled the following isotopes in the quantities indicated:

<u>Isotope</u>	<u>Maximum Activity</u>	<u>Type of Use</u>
Carbon-14	<1 $\mu$ Ci	Source & Tracer
Cobalt-60	60 Ci	Source
Technetium-99	1 $\mu$ Ci	Source
Strontium-90	<1 $\mu$ Ci	Source
Barium-13	<1 $\mu$ Ci	Source
Cesium-137	5 Ci	Source
Radium-226	1.5 Ci	Source
Uranium-235	<1 $\mu$ Ci	Source
Cobalt-58	900 $\mu$ Ci	Tracer
Hydrogen-3	10 Ci	Tracer



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<u>Isotope</u>	<u>Maximum Activity</u>	<u>Type of Use</u>
Plutonium-239	<1 $\mu$ Ci	Source
Potassium-40	1 $\mu$ Ci	Tracer
Hydrogen-3	10 $\mu$ Ci	Tracer
Uranium-235	Classified	Fuel Pins & Clusters
Plutonium-239	Classified	Fuel Pins & Fuel Sub-Assemblies
Cobalt-60	Classified	Reactor Contaminants
Krypton-85	Classified	Reactor Contaminants
Cesium-137	Classified	Reactor Contaminants
Cerium-144	Classified	Reactor Contaminants
Sodium-22	Classified	Reactor Contaminants
Sodium-24	Classified	Reactor Contaminants

Educational Background and Additional Information

Mr. Farnsworth received his Bachelor's Degree majoring in chemistry from the University of Idaho in 1976. For 2 1/2 years he worked at the reactor center in Idaho Falls, Idaho, for Westinghouse and Argonne in radiation protection.



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Resumé

John C. Courtney

Work

LSU Nuclear Science Center  
Baton Rouge, LA 70803  
(504) 388-2163

Personal Data

Born: June 11, 1938 in Washington, DC  
Married to former Peggy J. Roberts  
Height - 6'2"; Weight - 200 lbs; Health - Excellent

Professional Certifications and Registrations

Certified Health Physicist-1973; Recertified-1979  
Registered Professional Nuclear Engineer in California-1976. Renewed until  
1986, Certificate Number NU 567.

Clearances

Department of Defense Top Secret - July 1963 to present.  
US Atomic Energy Commission Q Clearance, 1963 to 1968.  
US Department of Energy L Clearance, 1976 to present.

Professional Societies

American Nuclear Society since 1965, Member of the Radiation Protection  
and Shielding Division and the Remote Systems Technology Division.  
Health Physics Society since 1974.

## EDUCATION

Doctor of Nuclear Engineering, June 1965, Catholic University of America, Washington, DC. Dissertation Title: "Fast Neutron Scattering from Small Cylinders of Steel, Aluminum, and Graphite."  
First Minor: Physics. Second Minor: Applied Mathematics.

Master of Nuclear Engineering, June 1962, Catholic University of America, Washington, DC. Thesis Title: "The Construction and Operational Testing of an Internally and Externally Water Moderated Natural Uranium Subcritical Reactor" (unpublished).

Bachelor of Civil Engineering, June 1960, Catholic University of America, Washington, DC. Magna Cum Laude.

## PROFESSIONAL EXPERIENCE

Present Position: Since 1971

Professor of Nuclear Engineering at the LSU Nuclear Science Center. Responsible for instruction in graduate and undergraduate courses in nuclear engineering, reactor safety, radiation shielding, and neutron measurements. Direct masters' theses and student projects in fission reactor simulation, radiation transport, health physics, neutron physics, and criticality safety. Managed the LSU Californium Demonstration Center which had the objective of stimulating the development of applications of this radioisotopic intense source of neutrons. Design shield and irradiation facilities for LSU and clients outside of the university. Assist investigators in projects involving californium, especially in the areas of radiation safety and measurements. Develop and conduct continuing education courses in radiation safety. Represent the LSU System as Councilor to Oak Ridge Associated Universities. Work with outside agencies, such as the national laboratories, to enhance our instructional program. Part-time Consultant in Radiation Safety. Clients have included the US Army Corps of Engineers, Vicksburg, MS; Nuclear Systems, Inc., Baton Rouge, LA; E. I. duPont de Nemours, Wilmington, DE; Continental Oil Co., Ponca City, OK; and Argonne National Laboratory, Idaho Falls, ID.

Previous Positions:

Aerofjet Nuclear Systems Company, Sacramento, CA, 1968-1971.

Physics Specialist and Supervisor. Responsible for calculations of the radiation environment due to the operation of the nuclear rocket engine, including the effects of shielding on radiation levels and the associated systems shield weights. Investigated optimum methods of shielding the engine system to meet the requirements for both manned and unmanned missions. Engaged in the systems engineering process to provide direction to subcontractors and maintain traceability on radiation calculations. Generated nuclear radiation heating rates to support engine and component design and analysis. Involved in the measurement of neutron and gamma radiation levels during the experimental engine tests at the Nevada Rocket Development Station at Jackass Flats, NV.

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Sacramento Municipal Utility District, Sacramento, CA, 1969-1971 (part-time).

Lecturer and Consultant. Involved in reactor operator training course at Rancho Seco nuclear power plant. This required development and presentation of instructional material to prepare personnel for the NRC licensing examination. Directly employed by SMUD (part-time) in 1971; formerly associated with California State University at Sacramento which administered the course until 1970. Topics included classical and modern physics, basic nuclear engineering, health physics, and nuclear instrumentation. The level of instruction was designed primarily for plant operating personnel; however, professional engineering staff members were required to satisfactorily complete the course.

California State University at Sacramento, 1966-1971 (part-time).

Associate Professor, Mechanical Engineering Department. Taught advanced undergraduate course in nuclear engineering from September 1966 to June 1967, and from September 1968 to June 1969. Taught graduate level special topics courses emphasizing radiation detection, shielding, hazards analysis, and fuel cycles from September 1967 to June 1968. Taught graduate course in nuclear engineering as an Associate Professor in the Extension School from October 1970 to February 1971.

U. S. Air Force, McClellan AFB, California, 1965-1968 (active duty)

Nuclear Research Officer, McClellan Central Laboratory (AFTAC). Conducted investigations of neutron and charged-particle activation analyses for classified applications. Responsible for the design and testing of sophisticated counting and spectroscopy systems for materials analyses and the interpretation of experimental data. Developed and taught courses on graduate school level for officer training program. Courses included radiation safety, nuclear instrumentation, and several classified topics.

Oak Ridge National Laboratory, Oak Ridge, TN, 1963-1965.

Consultant to Neutron Physics Division (1965) and Graduate Fellow (1963-64). Completed doctoral dissertation during most of this period. Dissertation compared OSR Monte Carlo calculations with proton recoil measurement of scattered fast neutron spectra. Held a consultant's contract and was responsible for the measurement and calculation of fast neutron spectra by a variety of techniques. This involved extensive Monte Carlo calculations of detector response functions, as well as neutron transport.

Allis-Chalmers Manufacturing Company, Washington, DC, 1962-1963.

Assistant Engineer, EGCR Project, Atomic Energy Division, Nuclear Power Department. Responsible for a variety of technical and administrative tasks relating to the construction of the Experimental Gas Cooled Reactor during this summer and part-time position. Prepared the radiological hazards report and contributed to the thermal and nuclear analyses of the reactor.



#### ARTICLES IN REFEREED JOURNALS

V. V. Verbinski and J. C. Courtney, "Photoneutron Spectra and Cross Sections for C-12 and O-16", Nuclear Physics Vol. 73 (1965), 398.

V. V. Verbinski, M. S. Bokhari, J. C. Courtney, and G. E. Whitesides, "Measurements and Calculations of the Spectral and Spatial Details of the Fast-Neutron Flux in Water Shields", Nuclear Science and Engineering, Vol. 27, 283-298 (1967).

V. V. Verbinski, N. A. Betz, and J. C. Courtney, "A Method of Evaluating Fast Neutron Differential Scattering Cross Sections with Short Experimental Runs", Nuclear Instruments and Methods, Vol. 52 (1967), 181.

M. C. Stansbury, J. C. Courtney, and D. B. Greenberg, "Hybrid Simulation of a Pressurized Water Nuclear Reactor", COED Transactions, Computers in Education Division ASEE, Vol. VI, No. 4, April 1974.

J. C. Courtney, R. L. Black, C. E. Holson, and E. Hylsky, "Design of an Air Sampling System for a Nuclear Fuel Examination Facility", Proceedings of the 25th Conference on Remote Systems Technology-1977, pages 21 to 27. (Also Trans. Am. Nucl. Soc. 27(1) (1977), (844).

J. E. Morel and J. C. Courtney, "Subcadmium Fluxes Near Cf-252 Sources in Water", Health Physics, Vol. 35, 398-401 (August 1978).

J. C. Courtney, J. P. Madison, F. L. DiLorenzo, J. B. Anderson, and L. D. Lau, "Measured Airborne Radioactivity in the Hot Fuel Examination Facility-North", Proceedings of the 26th Conference on Remote Systems Technology-1978, pages 54 to 59. (Also Trans. Am. Nucl. Soc. 28(1) (1978), (777).

J. C. Courtney and V. N. Thelen, "A Plutonium Safety Training Program", Health Physics, Vol. 35, 860-862 (December 1978).

J. P. Bacca, R. L. Brookshier, J. C. Courtney, K. R. Ferguson, M. F. Huebner, and J. P. Madison, "Decontamination and Refurbishment of the Hot Fuel Examination Facility-South (HFEF/S Argon Cell". American Nuclear Society Conference on Decontamination and Decommissioning of Nuclear Facilities, September 1979.

J. C. Courtney, J. P. Madison, C. E. Holson, R. C. Black, F. L. DiLorenzo, J. B. Anderson, E. Hylsky, and L. D. Lau, "Sampling of Airborne Radioactivity in a Hot Fuel Examination Facility", Health Physics, Vol. 39, 737-750 (November 1980).

J. C. Courtney and V. N. Thelen, "Criticality Safety Training at a Fuel Examination Facility", Health Physics, Vol. 40, 729-731 (May 1981).

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ARTICLES IN REFEREED JOURNALS (CONTINUED)

Y. W. Han, J. Timpa, A. Ciegler, J. C. Courtney, W. F. Curry, and E. N. Lambremont, "Gamma Ray Induced Degradation of Lignocellulosic Materials", Biototechnology and Bioengineering, Vol. XXIII, Pp. 2525-2535, 1981.

F. L. DiLorenzo, D. A. McKenzie, T. C. Cameron, V. W. Thelen, and J. C. Courtney, "Hot Fuel Examination Facility Operating Philosophy and Experience", Proceedings of the 29 Conference on Remote Systems Technology-1981, pages 3-6. Also Trans. Am. Nucl. Soc. 39(1-1076), (1981), 963.

J. C. Courtney, K. R. Ferguson, C. E. Holson, and J. P. Bacca, "Radiation Safety Aspects of a Hot-Cell Decontamination," Health Physics, Vol. 43, 465-480 (October 1982).



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BOOKS OR PROCEEDINGS EDITED OR CO-EDITED

J. C. Courtney, editor, "A Handbook of Radiation Shielding Data," sponsored by the Radiation Protection and Shielding Division of the American Nuclear Society (ANS) and the LSU Nuclear Science Center; ANS Publication ANS/SD-76/14, July 1976, pp. 211.

G. P. Lahti, R. R. Lee, and J. C. Courtney, editors and compilers, "Radiation Streaming in Power Reactors-Proceedings of the Special Session-American Nuclear Society Winter Meeting," Washington, DC, November 1978. ANS Publication ANS/SD-79/16 (also issued as Oak Ridge National Laboratory's Radiation Shielding Information Center Report ORNL/RSIC-43, February 1979).

REFERREED PAPERS WITH ARCHIVAL SUMMARIES OR ABSTRACTS GIVEN AT NATIONAL MEETINGS. (UNDERLINED AUTHOR PRESENTED THE PAPER).

V. V. Verbinski, J. C. Courtney, W. R. Burrus, and T. A. Love, "The Response of Some Organic Scintillators to Fast Neutrons," Trans. Am. Nucl. Soc. 7(2), (1964), 374. Full text is published in Proceedings of the Special Session on Fast Neutron Spectroscopy ANS Publication ANS-SD-2, February 1965.

J. C. Courtney, V. V. Verbinski, and N. A. Betz, "Fast Neutron Scattering from Small Cylinders of Steel, Aluminum, Graphite, Concrete and Lithium Hydride", Trans. Am. Nucl. Soc. 8(2), (1965), 436.

E. A. Warman, D. L. Foreman, and J. C. Courtney, "Comparison of Computed and Measured Radiation Levels in NERVA Development Tests", Trans. Am. Nucl. Soc. 12(2), (1969), 415.

E. A. Warman, D. R. Rogers, J. C. Courtney, "Operating Radiation Environment of Nuclear Rocket Systems", Trans. Am. Nucl. Soc. 12(2), (1969), 416.

J. K. Warkentin and J. C. Courtney, "Monte Carlo Radiation Transport Analyses of the NERVA Nozzle Assembly", Trans. Am. Nucl. Soc. 13(2), (1970), 439.

J. C. Courtney, N. A. Hertelendy, and B. A. Lindsey, "Radiation Heating in Selected NERVA Engine Components", National Symposium on Natural and Manmade Radiation in Space, Session VI-1, March 1971. Full paper published in Proceedings NASA Report TMX-2440, January 1972.

J. C. Courtney, "Cf-252-An Educational Resource", Trans. Am. Nucl. Soc. 16(1), (1974), 29.

J. C. Courtney and D. S. Ambuehl, "Fission Spectrum Calculations on Slab Geometries", Trans. Am. Nucl. Soc. 21(1), (1975), 76.

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J. T. Robert and J. C. Courtney, "Comparisons of Measured Neutron Fluxes with ANISN and SABINE Calculations", Trans. Am. Nucl. Soc. 21(1), (1975), 547.

C. C. Price, P. N. English, and J. C. Courtney, "An Improved Design for an Active Calorimeter", Trans. Am. Nucl. Soc. 27(1), (1977), 844.

J. C. Courtney and V. N. Thelen, "A Plutonium Training Program for Hot Fuel Examination Facility Personnel", Abstracts of papers at the Health Physics Society 23rd Annual Meeting, Minneapolis, MN, June 1978. (Also journal article).

J. C. Courtney, J. P. Madison, C. E. Holson, R. L. Black, and F. L. DiLorenzo, "Monitoring of Airborne Radioactivity in a Fuel Examination Facility", Abstracts of papers given at the Health Physics Society 24th Annual Meeting, Philadelphia, PA, July 1979.

J. C. Courtney, K. R. Ferguson, C. E. Holson, and J. P. Bacca, "Personnel Protection for the Decontamination of the HFEF/S Fuel Reprocessing Hot Cell", Abstracts of Papers given at the Health Physics Society 25th Annual Meeting, Seattle, WA, July 1980. (Also journal article).

A. S. Garcia, J. C. Courtney, F. L. DiLorenzo, and J. P. Bacca, "Administrative Practices for Criticality Safety at the Hot Fuel Examination Facility" Trans. Am. Nucl. Soc. 38(1-776), (1981), 365.

J. C. Courtney and V. N. Thelen, "A Criticality Safety Training Program for Hot Fuel Examination Facility Personnel", Abstracts of Papers given at the Health Physics Society 26th Annual Meeting, Louisville, KY, June 1981. (Also journal article).

F. L. DiLorenzo, D. A. McKenzie, T. C. Cameron, V. N. Thelen, and J. C. Courtney, "Hot Fuel Examination Facility Operating Philosophy and Experience", Trans. Am. Nucl. Soc. 39(1-1076), (1981), 963.

R. C. McIlhenny, J. C. Courtney, and F. A. Iddings, "Dose Minimization Experience at a Californium Facility", Abstracts of papers given at the Health Physics Society 27th Annual Meeting, Las Vegas, NV, June 1982.

J. C. Courtney and K. R. Ferguson, "Safety Analysis of the Hot Fuel Examination Facility/South", Abstracts of papers given at the Health Physics Society 27th Annual Meeting, Las Vegas, NV, June 1982.

J. C. Courtney, "Some Information Needs in Radiation Protection," Trans. Am. Nucl. Soc. (In Press - To be presented in Detroit, MI in June 1983 as an invited paper).

A. S. Garcia, J. C. Courtney, and V. N. Thelen, "Criticality Safety Training at the Hot Fuel Examination Facility," Trans. Am. Nucl. Soc. (In Press - To be presented in Detroit, MI in June 1983 as an invited paper).

## TECHNICAL REPORTS

- J. C. Courtney, "Radiological Hazards of the Experimental Gas Cooled Reactor", Allis-Chalmers Atomic Energy Division Unclassified Report, ACNP-61535 (Rev. 1), July 1963.
- V. V. Verbinski, J. Kirkbride, P. Phelps, and J. Courtney, "Measurements of Fast-Neutron Transport in Water by Time-of-Flight Techniques", in ORNL-3499 (Vol. (p. 108-15). August 1963.
- J. C. Courtney and V. V. Verbinski, "Measured Neutron Source Spectra for Angular Scattering Experiments with Small Cylinders", ORNL-TM-1087, April 1965.
- J. C. Courtney, "Fast Neutron Scattering from Small Cylinders of Steel, Aluminum, and Graphite", ORNL-TM-1158, June 1965.
- V. V. Verbinski, R. E. Textor, and J. C. Courtney, "Fast Neutron Spectroscopy with Organic Scintillators", in ORNL-3858, August 1965.
- M. Young, V. V. Verbinski, W. R. Burrus, and J. C. Courtney, "Differential Neutron Cross Sections for Several Materials Bombarded by 14, 18, and 56 MeV. Protons", in ORNL-3858, August 1965.
- R. T. Santoro, T. A. Love, W. R. Burrus, and J. C. Courtney, "Effects of Plastic Layers and Light Pipes on the Efficiency of Organic Neutron Scintillators", in ORNL-3858, August 1965.
- R. M. Freestone, Jr., V. V. Verbinski, W. R. Burrus, and J. C. Courtney, "Analysis of Tower Shielding Facility Neutron Scattering Data", in ORNL-3973 (Vol. 1), (p. 46), September 1966.
- E. A. Warman, J. C. Courtney, and D. L. Foreman, "Flexible Engine Shielding Test Facility Study", Aerojet General Report RN-S-0507, March 1969.
- N. A. Hertelendy and J. C. Courtney, "XE-P Low and Intermediate Passive Dosimetry Results", Aerojet-General Report RN-S-0531, November 1969.
- E. A. Warman, D. R. Rogers, J. C. Courtney, C. E. Dixon, J. R. Smith, and J. Conant, "Radiation Exposure Limitations for Shielded NERVA Engine Components", Aerojet Nuclear Systems Co., Report RN-S-0557, April 1970.
- J. C. Courtney, B. A. Lindsey, N. A. Hertelendy, D. R. Rogers, E. A. Warman, and J. K. Warkentin, "NERVA Nozzle Assembly Radiation Environment", Aerojet Nuclear Systems Co., Report S-110-XE-01-W11861, June 1970.
- J. C. Courtney, B. A. Lindsey, and N. A. Hertelendy, "XE Radiation Analysis", Aerojet Nuclear Systems Co., Report S-110-XE-01-W11861, June 1970.



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E. A. Warman, J. C. Courtney, and K. O. Koebberling, "Final Report of Shield System Trade Study", Aerojet Nuclear Systems Co., Report S-054-023, July 1970.

J. C. Courtney and R. C. McIlhenny, "Shielding Analysis and Safety Recommendations for the Waterways Experiment Station Californium-252 Facility", Consultant's Report to US Army Corps of Engineers, Vicksburg, MS, February 1973.

J. C. Courtney, "Shielding Design and Safety Recommendations for the Engineering Geology Research Facility at the Waterways Experiment Station", Consultant Report to US Army Corps of Engineers, Vicksburg, MS, November 1975.

J. C. Courtney, "Final Report on the Operations of the Louisiana State University Californium Demonstration Center", April 1979.

CONSULTING - SINCE 1974

Nuclear Systems, Inc; Baton Rouge, Louisiana. Radiation safety analyses, designs of shields and irradiation devices, and development of non-destructive nuclear techniques for inspection of reinforced concrete.

E. I. duPont de Nemours; Wilmington, Delaware. Design and safety analysis of a Cf-252 storage and irradiation facility.

Continental Oil Co.; Ponca City, Oklahoma. Development of short courses in radiation safety.

Argonne National Laboratory; Idaho Falls, Idaho. Design of fixed air sampling systems for plutonium-handling facilities, development of data management techniques for air quality; review and upgrading of environmental monitoring programs; development and presentation of training courses in plutonium safety and criticality prevention; shielding design and analysis of a neutron radiography installation; design of safety aspects of fuel-handling equipment; selection of dosimetry for complex radiation fields; emergency planning; radiation safety support for the refurbishment of a fuel reprocessing facility; and safety analysis of the Hot Fuel Examination Facility/South.

US Army Corps of Engineers, Waterways Experiment Station; Vicksburg, Mississippi. Design and analysis of two installations devoted to the application of Cf-252 and x-rays to problems in soil mechanics, geology, and structural material quality assurance.

Louisiana Legislature Joint Natural Resources Committee on Nuclear Energy Studies. Provide consultation on nuclear fission power concerns; assist in process of arranging public hearings; and obtaining detailed technical information to supplement testimony.

Oak Ridge Associated Universities; Oak Ridge, Tennessee. Review of criticality safety training programs at Department of Energy Facilities.



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NON-REFEREED TECHNICAL PAPERS IN NATIONAL MEETINGS

V. V. Verbinski, J. C. Courtney, D. F. Herring, R. B. Walton, and R. E. Sund, "Spectra of Photoneutrons from Carbon Oxygen, and Aluminum at Angles of 55, 93, and 141 Degrees", American Physical Society, Chicago, IL, October 1964.

F. A. Iddings, A. Arman, L. W. Miller, E. J. Landry, and J. C. Courtney, "Determination of Cement in Soil-Cement Mixtures Using Cf-252", USAEC Conference on the Applications of Californium-252, Austin, TX, September 1972.

A. E. Johnson, E. Hamilton, and J. C. Courtney, "An In-Core Executive Program written in FORTRAN for Implementing Digital Control", AICHE 74th National Meeting, New Orleans, LA, March 1973.

A. E. Johnson, E. Hamilton, and J. C. Courtney, "A Hybrid Computer Demonstration of an On-Line Digital Computer Process Control Application", AICHE 74th National Meeting, New Orleans, LA, March 1973.

R. M. Wyatt and J. C. Courtney, "Cf-252 Neutron Spectra Within an Irradiation Chamber", American Physical Society, Washington, DC, April 1973.

M. C. Stansbury, J. C. Courtney, and E. Chen, "Hybrid Simulation of a PWR Nuclear Steam Supply System. Summer Computer Simulation Conference, Houston, TX, July 1974, Sponsored by AICHE, ISA, SHARE, SCS, and AMS. (Full paper in the Proceedings p. 481-489).

J. C. Courtney and W. F. Curry, "Summary of the LSU Demonstration Center Operation", Californium Utilization Meeting, Atlanta, GA, October 1978. (Invited Paper).

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Manuscripts in Preparation

"Neutron Shielding" for the CRC Handbook of Radiation Measurement and Protection, Section B, Volume II, draft due in 1982. This section is about 180 pages in length; it draws together useful information on neutron shielding from a variety of sources. The gamma ray shielding data supplied by D. K. Trubey of Oak Ridge National Laboratory will be added to produce a Radiation Shielding Information Center Report.

"Safety Analysis of the Hot Fuel Examination Facility", J. C. Courtney and K. R. Ferguson. An Argonne National Laboratory Report that will serve as a basis for one or more articles or papers. To be published in 1982.

"Preliminary Safety Analysis Report for a Sodium Contaminated Waste Processing Facility", K. R. Ferguson, E. Hylsky, and J. C. Courtney. An Argonne National Laboratory Report to be published in 1982.

"Shielding Considerations for Hot Cell Windows", K. R. Ferguson and J. C. Courtney. Invited paper for November 1983 American Nuclear Society Meeting in San Francisco, CA. This will also be expanded to an article for the Proceedings of the 31st Conference on Remote Systems Technology - 1983.

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PROFESSIONAL SOCIETY ACTIVITIES AND COMMITTEE WORK

Local and Regional

Deep South Chapter, Health Physics Society - Member since 1972  
Treasurer 1975-76

Idaho Chapter, Health Physiciaty - Member since 1977

Idaho Chapter of the American Nuclear Society - Member since 1978

National

Health Physics Society - Plenary Member since 1975. Certified Health Physicist.

American Nuclear Society - Full Member since 1965. Member of Radiation Protection and Shielding (R P & S) Division and the Remote Systems Technology Division.

R P & S Division Committees:

Nominating 1973-74

Technical Review for Annual Meetings:

1975 New Orleans, LA	1983 Detroit, MI
1979 Atlanta, GA	1983 San Francisco, CA
1980 Las Vegas, NV	1984 New Orleans, LA
1981 Miami Beach, FL	

Executive Committee 1983-86

Publications:

1973-74	1980-81 Chairman
1974-75 Chairman	1981-82 Chairman
1978-79 Chairman	1982-83 Chairman
1979-80 Chairman	

Technical Review Committee for Topical Meeting on Fission Product Behavior and Source Term Research to be held in Snowbird, UT in July 1984.

Intersociety Liaison for Technical Program Committee for the 1984 New Orleans Meeting.