

NRC Form 313 I (12-81) 10 CFR 30		U.S. NUCLEAR REGULATORY COMMISSION	
APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL		1. APPLICATION FOR: <i>(Check and/or complete as appropriate)</i>	
<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.		<input type="checkbox"/> a. NEW LICENSE <input type="checkbox"/> b. AMENDMENT TO: LICENSE NUMBER <input type="checkbox"/> c. RENEWAL OF: LICENSE NUMBER X 14-11978-01	
2. APPLICANT'S NAME <i>(Institution, firm, person, etc.)</i> <u>Iowa Office of Disaster Services</u> TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION <u>515 281-3231</u>		3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION <u>James E. Phipps</u> TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION <u>515 278-9317</u>	
4. APPLICANT'S MAILING ADDRESS <i>(Include Zip Code)</i> <i>(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)</i> Hoover State Office Building Room A-29 Des Moines, IA 50319		5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED <i>(Include Zip Code)</i> Building B-66 -- Camp Dodge RR 1 Grimes, IA 50111	
(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. James Ellis Phipps		Radiological Systems Maintenance Officer	
b. Gerald Allan Lang		Radiological Systems Inspection, Calibration & Repair Technician	
c.			
7. RADIATION PROTECTION OFFICER <div style="border: 1px solid black; padding: 5px; width: fit-content;"> RECEIVED BY LFMB Date: 2/27/84 Log: [Signature] By: [Signature] </div>		Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.	
8. LICENSED MATERIAL			
LINE NO.	ELEMENT AND MASS NUMBER	Orig. T/CHEMICAL AND/OR ACTION FORM	NAME OF MANUFACTURER AND MODEL NUMBER <i>(If Sealed Source)</i>
A	B	C	D
(1)	Cesium-137	Sealed Source	ORNL 2339A, or 130 Curies
(2)			ORNL DSK-2384 143 Curies
(3)			
(4)			
DESCRIBE USE OF LICENSED MATERIAL E			
(1) For calibration of radiological detection instruments.			
(2) 8509110365 850903 REG3 LIC30			
(3) 14-11978-01 PDR			
(4)			

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FEE EXEMPT

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)	Radiological inst. calibrator	Technical Operations, Inc.	CD V-794 Model 2			
(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)	Geiger Counter	Victoreen	CD V-700M	2	Beta Gamma	0-50 mR/hr
(2)	Survey Meter	Victoreen	CD V-715	2	Gamma	0-500 R/hr
(3)	Dosimeter	Bendix	CD V-138	10	Gamma	0-200 mR
(4)	Scaler	Ludlum	2200	1	Beta Gamma	0-999,999 cpm

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10	
<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY	<input checked="" 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 checked="" type="checkbox"/> (1) FILM BADGE <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) <input type="checkbox"/> (3) OTHER (Specify): _____	Lexington-Blue Grass Depot Attn: SDSRR-LQCP Lexington, KY 40511	<input checked="" type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY <input type="checkbox"/> OTHER (Specify): _____

13. FACILITIES AND EQUIPMENT (Check where 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. <input type="checkbox"/> b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. <input 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 None
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. No disposal of waste in anticipated.

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:

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)

Not required - Section 170-11
paragraph (a) (9) 10 CFR 170

(1) LICENSE FEE CATEGORY:
Section 170.31 para 8 10 CFR

(2) LICENSE FEE ENCLOSED: \$

b. CERTIFYING OFFICIAL (Signature)

c. NAME (Type or print)

John D. Crandall

d. TITLE

Director

e. DATE

February 13, 1984

Attachment No. 1 -- Item 11
b. Calibrated by Applicant

1. The CDV 700 geiger counters are calibrated semi-annually, using the CDV 790 Model 1 Calibrator. The CDV 790 Calibrator output exposure rates are known to be within $\pm 5\%$ of the National Bureau of Standards (NBS) Roentgen.
2. The CDV 715 survey meters are calibrated semi-annually, using the CDV 794 Model 2 Calibrator.
3. The Ludlum Model 2200 scaler is calibrated each time it is used with a 0.05uc Cs-137 Beta Standard Source.

Attachment No. 2 -- Item 15
Radiation Protection Program

A. Control and Safety Measures

1. The byproduct material contained in the Calibrator will only be used in the Radiological Maintenance Shop, Building B-66 -- Camp Dodge, Grimes, Iowa.
2. The licensee will comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Code of Federal Regulations".
3. Byproduct material shall be used by, or under the supervision and in the physical presence of: James E. Phipps, or Gerald A. Lang.
4. The calibrator will be used only in accordance with the Operation and Maintenance manual prepared by Technical Operations, Inc.
5. The calibrator will not be used to radiate objects or substances other than prescribed by DCPA.
6. The calibrator will be locked when not in use.
7. Personal access to this room will be at the discretion of the Radiation Protection Officer.
8. After hours security of Building B-66 will be provided by the Camp Dodge Security Patrol.
9. Individual radiation protection.
 - a. Individual film badges will be worn by all employees and results recorded on NRC Form 5.
 - b. NRC Form 3 and a copy of the license will be posted.
 - c. The calibrator and all doors to the shop will be posted with a Radioactive Material sign.

B. Survey and Leak Tests

1. At intervals not to exceed 6 months, a CDV 700 will be used to survey the calibrator and if no reading in excess of 2 mR/hr is noted one foot from the calibrator, the surface will be checked to see if exposure exceeds 2 mR/hr.

Attachment No. 2 -- Item 15
Continued
Radiation Protection Program

2. A leak test will be performed at intervals not to exceed 6 months by, or under the supervision of the Radiation Protection Officer. This test will be performed by taking a wipe smear of the unsealed end of the source confinement cylinder and evaluated with a G-M Counter capable of detecting .005 microcuries of gross Beta Gamma concentration. The results of both leak tests and surveys will be recorded in a permanent log book.
3. If either the survey exceeds 2 mR/hr or the wipe test detects more than .005 microcuries of gross Beta Gamma concentration, the calibration area will be cleared of all personnel. Personnel will be monitored to check for contamination and the 2 mR/hr isodose line established with barriers, rope, locked doors and guards if necessary. The following will be notified by telephone or telegraph:
 - a. Region III
Office of Inspection and Enforcement, USNRC
799 Roosevelt Road
Glen Ellyn, Illinois 60317
Telephone: 312 790-5500
 - b. Regional Radiological Defense Officer
FEMA, Region 7
Old Federal Office Building, Room 300
911 Walnut Street
Kansas City, Missouri 64106
Telephone: 816 374-2081
4. In the event of fire, explosion or any situation which might cause a release of radioactive material, the agencies listed in Paragraph 3 above, will be notified immediately by telephone or telegraph.

C. Disposal

1. The calibrator will be returned to DCPA for disposal of radioactive material. In no case will the sealed source be opened.

Attachment No. 3 -- Item No. 16
Formal Training in Radiation Safety

Gerald A. Lang, User	
Radiological Monitoring for Instructors	1 week
Camp Dodge, Iowa	
December 12 - 16, 1966	
 Radiological Defense Officer	2 weeks
Battle Creek, Michigan	
November 29 - December 10, 1971	
 Basic Radiological Health Course	1 week
San Antonio, Texas	
February 21 - 25, 1983	
(Enclosure No. 1)	
 James E. Phipps, Radiological Protection Officer	
Nuclear Weapons Employment Officer	5 weeks
Fort Sill, Oklahoma	
May 25 - June 26, 1964	
 Basic Radiological Health Course, No. 211	2 weeks
Kansas City, Missouri	
September 12 - 23, 1966	
(Enclosure No. 2)	
 Radiological Monitoring for Instructors	1 week
Camp Dodge, Iowa	
December 12 - 16, 1966	
 Occupational Radiation Protection 212	2 weeks
Las Vegas, Nevada	
June 25 - July 8, 1967	
(Enclosure No. 3)	
 Orientation Course Calibrator CDV 794	3 days
Denver, Colorado	(Enclosure No. 4)
November 15 - 17, 1967	
 Radiological Emergency Response Operations	2 weeks
Mercury, Nevada	
February 20 - 29, 1982	
 Basic Radiological Health Course	1 week
San Antonio, Texas	
February 21 - 25, 1983	
(Enclosure No. 1)	

Enclosure No. 1 to Attachment No. 3

BASIC RADIOLOGICAL HEALTH

COURSE SCHEDULE

FEBRUARY 21 - 25, 1983

MONDAY, FEBRUARY 21, 1983

8:00 - 10:00	Review of Basic Physics and Radiological Units	Waggener
10:00 - 11:00	Structure of Matter, Atomic and Nuclear Structure, Electrons and Electronic Shells, Dimension and Energy Considerations	McDavid
11:00 - 12:00	Review of Basic Chemical Principles and Periodic Chart	McDavid
1:00 - 4:00	Biological Effects of Radiation	Bushong
4:00 - 5:00	Structure Matter Continued - Nuclear Composition, and Binding Energy Consideration	Waggener

TUESDAY, FEBRUARY 22, 1983

8:00 - 9:00	X-ray Machines, Production of X-rays	Waggener
9:00 - 11:00	Time, Distance & Shielding Uses in Radiation Safety	Waggener
11:00 - 12:00	Accelerators	Wiatrowski
1:00 - 2:00	Radiation, Quantities and Units	McDavid
2:00 - 3:00	Radioactivity, Non-medical Radioactivity General	Kopp
3:00 - 5:00	Introduction and Basic Equation	Kopp

WEDNESDAY, FEBRUARY 23, 1983

8:00 - 9:00	Introduction to Industrial Radiation Uses	Cadena
9:00 - 10:00	Industrial Radiation Uses	Cadena
10:00 - 12:00	Statistics Lab & Demonstration on Radioactivity - 612F	Benedetto
1:00 - 2:00	Interaction of Radiation with Matter Photons (Coherent and Compton Scattering)	McDavid
2:00 - 3:00	Interactions of Radiation with Matter Photons (Photoelectric Effect, Pair and Triplet Productions)	McDavid
3:00 - 5:00	Demonstration Lab on Absorption of Radiation - 612F	Benedetto

THURSDAY, FEBRUARY 24, 1983

8:00 - 9:00	Internal Dosimetry & Maximum Permissible Concentrations	Boston
9:00 - 10:00	Non-ionizing Electromagnetic Radiation	Harris
10:00 - 12:00	Natural Radiation in the Environment	Manka
1:00 - 3:00	Radiation Detection Devices, Personnel Dosimeters, and Dosimetry Record Keeping	Burger
3:00 - 5:00	Radiation Detection Devices, Ionization Chambers, Proportional Counter, Geiger Counters, Solid Scintillation Detectors, Neutron Detectors, Chemical Detectors Film, Thermoluminescent Detectors	Wiatrowski

FRIDAY, FEBRUARY 25, 1983

8:00 - 10:00	Introduction to Statistics	Waggener
10:00 - 11:00	Reactors	Wiatrowski
11:00 - 12:00	Federal and State Radiation Control Programs	Nanus

Enclosure No. 2 to Attachment No. 3

AGENDA

BASIC RADIOLOGICAL HEALTH, (CD)

September 12-23, 1966

CONDUCTED BY

WESTERN RADIOLOGICAL HEALTH TRAINING SECTION
Kansas City, Missouri

Course Director: R. L. Shearin

DATE & TIME	SUBJECT	MANUAL SECTION	SPEAKER
<u>Monday, September 12</u>			
<u>COURSE INTRODUCTION</u>			
8:30 - 9:00	Registration and Orientation		Shearin
9:00 - 9:15	Preview of Course		Shearin
9:30 - 10:05	Radiation Exposure Today	I	Gruber
<u>RADIATION FUNDAMENTALS</u>			
10:10 - 11:10	Atomic Structure	II	Shearin
11:15 - 12:15	Radioactivity	II	Sell
1:30 - 2:25	Chart of the Nuclides and Table of the Isotopes	II	Lyons
2:40 - 2:55	Film: Fundamentals of Radiation, Part I		Staff
3:00 - 3:55	Review: Mathematical Concepts for Radiological Health		Shearin
<u>Tuesday, September 13</u>			
8:30 - 9:30	Examination #1		Shearin
9:35 - 10:30	Interaction of Radiation with Matter	II	Sell
10:30 - 11:00	Demonstration: Cloud Chamber		Gruber
11:00 - 11:15	Film: Fundamentals of Radiation, Excerpts		Staff
<u>PERSONNEL AND SURVEY INSTRUMENTS</u>			
11:15 - 12:10	Basic Principles of Detection Instruments	III	Lyons
1:15 - 2:00	Survey Instruments	III	Shearin

1:00 - 1:50	Fission and Fusion	VII	Gruber
1:55 - 2:25	Problem Review		Staff
2:30 - 4:30	Laboratory: Survey of Radiological Facilities	X	Shearin Sell

Wednesday, September 21

8:30 - 9:25	Examination #4		Staff
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SOURCES OF RADIATION EXPOSURE

9:30 -10:00	Radiation Exposure from Natural Sources	IX	Lyons
10:15 -11:15	Film: The Strange Case of Cosmic Rays		Staff
11:20 -12:00	Reviews of Examinations #3 and #4		Staff
1:00 - 1:50	Nuclear Detonations and Origin of Fallout	IX	Gruber
1:55 - 2:25	Problem Review		Staff
2:30 - 4:30	Laboratory: Shielding (Laboratory Assignment)	X	Gruber

Thursday, September 22 NUCLEAR REACTORS

8:30 - 9:30	Basic Principles of Nuclear Reactors	VIII	Shearin
9:45 - 9:55	Film: Principles of Fast, Thermal and Breeder Reactors		Staff

SOURCES OF RADIATION EXPOSURE

10:00 -10:45	Industrial Applications of Radiation	IX	Lyons
10:50 -11:35	Medical Applications of Radiation	IX	Gruber
11:40 -12:00	Problem Review		Staff
1:00 - 1:50	Disposition of Radioactive Wastes	IX	Sell
2:00 - 2:30	Film: Criticality		Staff
2:30 - 4:30	Laboratory: Review of Reports on Radiological Survey		Shearin Lyons

Enclosure No. 2 to Attachment No. 3, Continued

-5-

Friday, September 23

8:30 - 9:30	Examination #5	Staff
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RADIATION EMERGENCIES

9:45 -10:45	Film: Enter with Caution: Atomic Age	Staff
10:50 -11:30	Review of Film	Shearin
11:30 -12:00	Review of Examination #5	Staff
12:00 -12:15	Course Evaluation	Shearin
12:15 -12:30	Course Closing	Shearin

Enclosure No. 3 to Attachment No. 3

Occupational Radiation Protection 212
Internal Dose Calculations

Laboratory Design for Contamination Control

Radioactivity Contamination Monitoring

Waste Disposal for Radionuclide Users

Laboratory Control of Airborne Activity

Sealed Sources of Neutrons, Productions, Hazards, and Calibration

Neutron Shielding and Protection Standards

Guidelines for Emergency Monitoring

Report of Emergency Exposure to External Radiation

Maximum Permissible Dietary Contamination After the Accidental
Release of Radioactive Material from a Nuclear Reactor

Guidelines for Emergency Monitoring of Food

Radium Accidents

Emergency Management of Accidents

Interagency Radiological Assistance Plan

Particle Accelerator Hazards

Megavolt X-Ray Units

Miscellaneous Source of X-Rays

Film Dosimetry for X and Gamma Radiation

Industrial X-Ray Equipment

Industrial X-Ray Protection

Transportation of Radionuclides

Byproduct Material Licensing

Radionuclide Analyzing

Energy Dependency of Instruments

X-Ray Calibration of Instruments

Leak Test of Sealed Sources

Control No. 7 6 3 5 5

Response Time of Survey Meters

Film Badge Exposure and Calculation

Enclosure No. 4 to Attachment No. 3

CALIBRATOR ON-THE-JOB TRAINING

PRESENTED AT

OCD REGION SIX, DENVER, COLORADO

SCHEDULE

Wednesday, November 15, 1967, at 1:00 p.m.

Introduction to TOI CD V-794 Calibrator, Model 2.

Functional operation.

Description of Components.

1. External Cabinet - Lock - Table
2. Source
3. Source Shield
4. Test Chamber
5. Attenuator - Dose Rate Selector Mechanism
6. Safety Interlock System - Entirely Mechanical
7. Shipping Bolt
8. Electrical System
9. Instrument Positioning Mechanism
10. Remote Range Changing Mechanism
11. Remote Calibration Pot Adjustment Mechanism
12. External Access Port
13. Decay Correction - Calendar Wheel

Accessory Box

Hazard Analysis

Fire
Radiation
Electrical
Transportation

Receipt of Calibrator

1. Unloading from Shipper
2. Shipping Crate - Removal
3. Palate
4. Incoming Radiological Inspection
5. Incoming Mechanical Inspection
6. Records

AEC Regulations and Applicability to Possession and Use of a CD V-794.

1. Minimum Formal Training and Education in Radiation Safety.
2. On-the-Job Orientation in the Operation and Use of a CD V-794.

Thursday, November 16, 1967, at 8:30 a.m.

Description of how Civil Defense instruments are calibrated in CD V-794 Model 2 Calibrator.

Film on operation and use of calibrator; and calibration of 715, 717, 710, 742, 781 and 720.

Leak Testing, General.

Leak Testing, Specific on CD V-794 Model 2.

Operation and use of EON Decade Scaler Model S10T.

0.05 mc Cs 137 Standard Source by Baird Atomic, Serial #CD-***.

Calibration of Instruments by Trainees.

Friday, November 17, 1967, at 8:30 a.m.

Calibrator Operation -- Discussion in detail of similarities and differences with other calibration systems. + UDMIA, etc.

Problems introduced with use of only one standard case bottom for calibration of all CD V-715s.

Use of Victoreen calibration transfer standard.

Calendar Wheel -- Decay Correction - Source Decay.

Calibration of Unlisted Instruments.

Preventive Maintenance.

Enclosure No. 4 to Attachment No. 3, Continued

Corrective Maintenance.

Reshipment of Calibrator.

1. Installation of Shipping Bolt.
2. Blocking Access Chamber Door.
3. Crating.
4. Shipping Labels.
5. Notifications.
6. Keys.

Specific items that should be included on each State's License Application.

Calibration of Instruments by Trainees.

Attachment No. 4 -- Item 17
Experience

Gerald A. Lang, User

Mr. Lang possesses a Byproduct Material User's Certificate to possess and use 30 millicuries of Cobalt 60 issued by the Iowa Office of Disaster Services in accordance with NRC license number 14-12501-01. In the last 11 years, he has performed over 60 wipe tests on Cobalt 60 sealed sources. He has also operated the calibrator CD V-794 Model 2 for 13 years under the direct supervision of James E. Phipps, Radiological Protection Officer. During this time, the following items were covered:

1. Description of major components of the calibrator.
2. Hazards of the calibrator.
3. Safety devices on the calibrator.
4. Necessary action taken upon receipt and shipment of the calibrator.
5. Leak test and leak test evaluation.
6. Preventive maintenance.
7. Calibration of instruments.
8. Calendar wheel decay compensator on the calibrator.
9. Radiation survey.
10. Explanation of present license and safety program.
11. Explanation of applicable NRC regulations.
12. Radiation hazards and biological effect on radiation.
13. Mr. Lang's total accumulated exposure:
.212 (rem).

Attachment No. 4 -- Item 17
Continued
Experience

James E. Phipps, Radiological Protection Officer

Mr. Phipps has been the Radiation Protection Officer for the radiation survey meter calibrator CD V-794, which contains 130 curies of Cs-137, since 1968. He also possesses a Byproduct Material User's Certificate to NRC license number 14-12501-01 to use 30 millicuries of Cobalt 60 for training of Radiological Monitors. He has performed semi-annual leak tests of both the Cobalt 60 and Cesium-137 since 1966. He has instructed 16 Radiological Defense Officer courses and over 50 Radiological Monitoring courses. During this time, his total exposure to radiation has been: .430 (rem).