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September 25, 1983

Nuclear Regulatory Commission
Material Licensing Branch
Division of Fuel Cycle and Material Safety
Washington, D.C. 20555

83 OCT -4 P3:16

ATTENTION: J. Bruce Carrico

Re: Mail Control No. 14980

Dear Mr. Carrico:

Thank you for your letter in response to our application for a byproduct material license. The information which you requested for further review of our license application is listed below and keyed to the questions in your letter.

1. Storage Location:

Prudhoe Bay has a limited road system with only the Spine Road and the Dalton Highway being named. We are located about 1 mile west of the junction of these two roads. Enclosed is a map of the general area showing the location of CAMCO's facility. (Enclosure 1)

2. RPO-RSO:

The position of Radiation Safety Officer will be filled by Mr. Bill Ochiltree. Appendix C-6 which lists the Radiation Protection Officer and the Radiation Safety Officer was not sent at the time of our application. Enclosed is a copy to be added to our operations manual. (Enclosure 2)

3. Licensed Materials:

On the application, Items 8, 5, and 6, the entry AM-HP should read AN-HP, a typographical error. The source will be Americium only. Enclosed is a corrected version of that page. (Enclosure 3)

4. Storage/Transport Containers:

The other sources will be contained in their respective logging tools. The logging tools have a protective sleeve which will be in place when the tools are transported.

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5. Survey Instruments:

At the present time we plan to use only one logging truck, at a given time, for logging work using radioactive materials. This is due to the limited amount of work requiring these materials. Should the work load increase, an adequate number of survey instruments will be purchased and be available for use.

6. Instrument Calibration:

The survey meter calibration frequency will be every six (6) months. See item 11a on our application showing six (6) months.

7. Facilities and Equipment:

- a. Enclosed is a diagram showing our shop area, offices, camp area, and the restricted area for the storage of radioactive materials. The restricted area will have a chain link fence around the 2mR/hr limit, inside and outside the building. The storage pit shown in Appendix B-1 will contain all source materials. A tool rack will be used to store all logging tools. This rack is located between the pit and the exterior wall of the shop building. (Enclosure 4)
- b. All tracer samples which we plan to use will be purchased from our supplier, Gulf Nuclear, in ready-to-use forms and quantities.
- c. The sealed sources are contained in the logging tools and normally will not be removed. In the event they are removed, handling devices, such as tongs, will be used. Handling tongs will be a minimum of twelve (12) inches long.
- d. There is some contradiction when reading these sections. It was not intended that personnel would handle sources with their hands instead of using remote handling devices. We will require workers to use remote handling tongs or other devices whenever necessary.

8. Package Receipt Procedures:

We are adding a section to our instructions to cover the receipt of radioactive materials. Enclosed is page II-4 which is to be added to the manual. (Enclosure 5)

Please note that the use of liquid Iridium - 192 has been deleted from Items 8, and 7 of our application. We do not plan to use this material. (Enclosure 3)

9. Survey Program:

The frequencies of our routine surveys for the facility storage area and trucks will be quarterly for the storage area and monthly for the trucks. This information is listed on page I-3, paragraph 6e and 6f, of our procedures manual. (Enclosure 6) In reference to the monitoring of the passenger compartment of the trucks, we have revised page II-2 to indicate the requirement of the 2mR/hr limit. (Enclosure 7) The reference to the use of a tool (Chapter I, paragraph 6g) to monitor the radiation

9. Survey Program: (continued)

level at well sites was meant to be an acceptable tool such as a survey meter. The reference was not intended to include downhole tools for such surveys.

10. Personnel Monitoring:

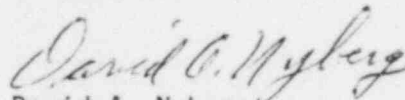
The bioassay program mentioned was not included in our application because of our work schedule and the limited amount of work using I-131. None of our workers will be exposed to more than 50 millicuries total in a seven day period. Our employees who would be handling the I-131, work a seven day on and seven day off schedule and would not be performing more than one job per work schedule.

11. Tracer Studies:

The tracer studies listed on page III-1 of the manual will not involve any well-to-well or secondary recovery operations. All our studies will be performed within a single well. Also, the oil companies prohibit such studies.

I hope these responses will satisfy your questions about our application. Please feel free to contact me if your need any further information.

Sincerely,



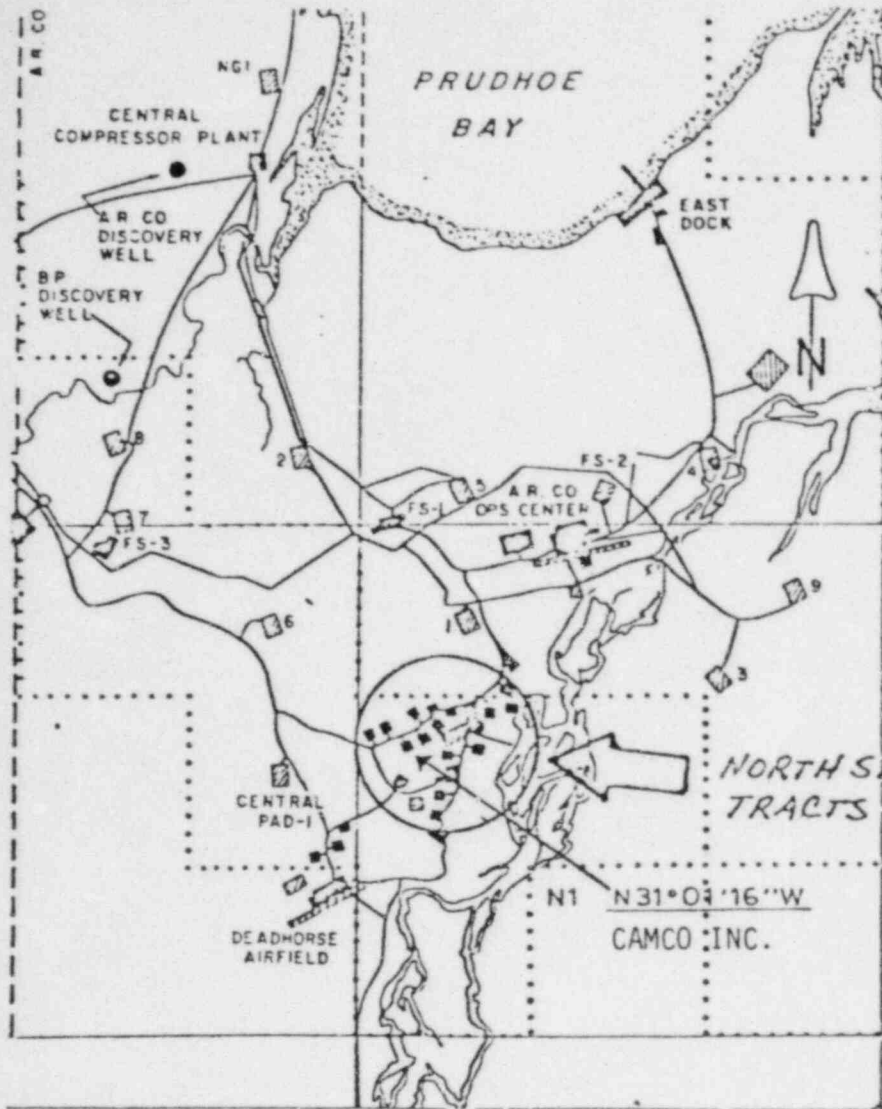
David A. Nyberg
Radiation Protection Officer

DAN:kjr

cc: Central File
Division Manager

Enclosures (7)

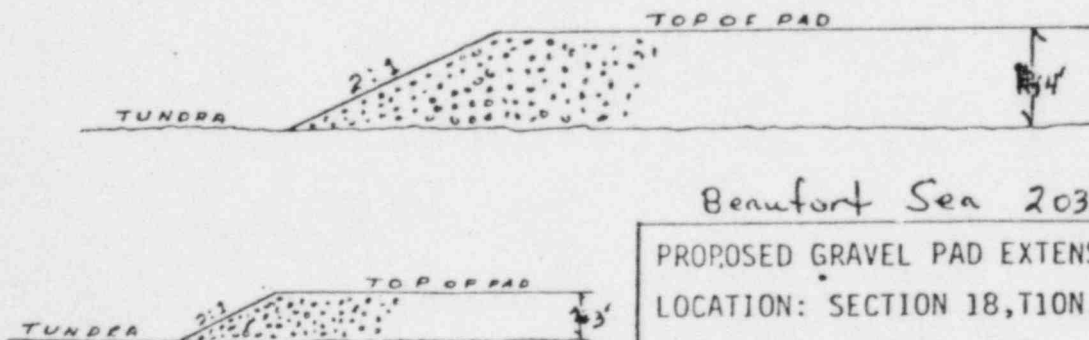
1. Map of Prudhoe Bay
2. Appendix C-6 (RSO - position)
3. Item 8 of application (Revised)
4. Appendix B-8 (Diagram of facilities)
5. Package Receipt Procedures (Page II-4, revised)
6. Page I-3
7. Page II-2 (Revised)



VICINITY MAP

NOTES:

1. PURPOSE: PROVIDE PAD FOR STORAGE AND CONSTRUCTION EXPANSION.
2. TOTAL GRAVEL: FILL 10,000 cy
3. EXTERIOR SLOPES: 2:1
4. NO TIDE WATERS, HIGH OR FLOWING WATERS ENCOUNTERED IN FILL AREA.
5. LEGAL DESCRIPTION:
A PORTION OF TRACT 21 (AS DESCRIBED ON EXHIBIT A), WITHIN PROTRACTED SECTIONS 8,17,18,19,20 OF T10N R15E UMIAT MERIDIAN, ALASKA SURVEY OF NORTH SLOPE LEASE TRACTS. ASLS 76-227.
6. GRAVEL SOURCE: THROUGH PRIVATE CONTRACTOR WHO WILL PERFORM GRAVEL EXCAVATION UTILIZING GRAVEL EXTRACTION PERMITS FROM THE STATE OF ALASKA.



TYPICAL PAD SECTION

Scale: 1" = 10'

Beaufort Sea 203

PROPOSED GRAVEL PAD EXTENSION
 LOCATION: SECTION 18, T10N, R15E, U.M.
 APPLICANT: CAMCO, INC.
 DATE: 7 JUNE 1981 SHEET 2 OF 2

APPENDIX C-6
REPORTING AGENCIES

Personnel/Agencies responsible for Radiological Health Programs. (Notify for emergencies, lost tools down hole, lost sources, major spills.)

1. Company Notification

Radiological Safety Officer - Bill Ochiltree
Office Telephone No. - (907) 659-2800
 - (907) 562-2132
Home Telephone No. - (907) 349-1153

Radiation Protection Officer - David Nyberg
Office Telephone No. - (907) 659-2800
 - (907) 562-2132
Home Telephone No. - (907) 349-5781

2. State Notification

State of Alaska
Environmental Health Section
Pouch H-60F
Juneau, AK 99811
(907) 465-3120

ATTENTION: Sidney Heidersdorf

3. NRC

United States Nuclear Regulatory Commission
1450 Marie Lane
Suite 210
Walnut Creek, CA 94596
(415) 943-3700

ITEM 8. LICENSED MATERIAL

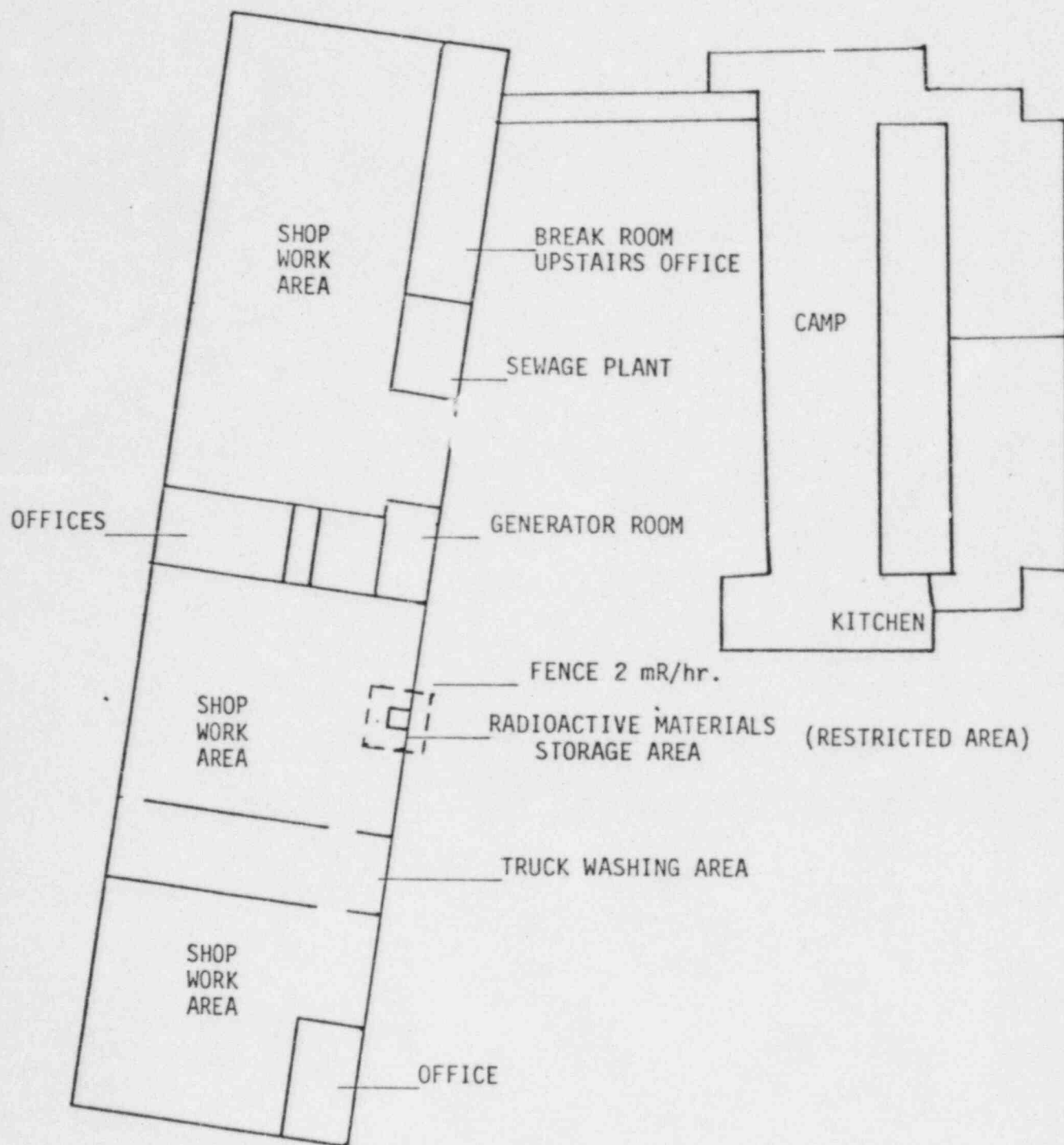
	ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	NAME OF MANUFACTURER AND MODEL NUMBER	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
	A	B	C	D
(5)	Americum 241	Sealed Source	Gamma Tron, Inc. AN - HP Am Source	Not to exceed 250 millicuries per source.
(6)	Americum 241	Sealed Source	Gamma Tron, Inc. AN - HP Am Source	Not to exceed 250 millicuries per source.
(7)	Iridium - 192	-- DELETE --		
(8)	Iodine - 131	Any form	-	30 millicuries total (10 mci per study)

DESCRIBE USE OF LICENSED MATERIAL

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- | | |
|-----|--|
| (5) | For use in oil and gas well logging. |
| (6) | For use in oil and gas well logging. |
| (7) | Tracer studies in oil, gas, & water injection wells. |
| (8) | Tracer studies in oil, gas, & water injection wells. |

APPENDIX B-8
CAMCO SHOP & CAMP



- (2) attempt to put out all fires if a radiation hazard is not immediately present
- (3) notify the fire department
- (4) notify the Radiation Safety Officer
- (5) the Radiation Safety Officer will set up restrictions governing the fire fighting and other emergency activities
- (6) following the emergency, monitor the area and ascertain the emergency devices necessary for safe decontamination
- (7) decontaminate
- (8) the Radiation Safety Officer will have to approve the area before work can resume
- (9) monitor all persons involved in combating the emergency
- (10) prepare a complete history of the accident and report to the Radiation Safety Officer who will in turn report it to the proper State Agency

c. Leaking Source

- (1) if a source is leaking which the logging tool would indicate, shut the operations down
- (2) notify contractor and immediately call Radiation Safety Officer for instructions
- (3) set up control procedures for keeping personnel out of the immediate area until instructions are received from the Radiation Safety Officer

8. Package Receipt Procedures:

a. Pick-up of Packages

- (1) Licensee will make prior arrangements with the carrier to be notified upon arrival of the package(s) at the carriers place of business and upon notification, Licensee will expeditiously pick up the package(s).
- (2) When picking up a package containing radioactive materials it will be handled by an individual wearing gloves and using remote handling tools.

b. Unpackaging Materials

- (1) The monitoring shall be performed as soon as practicable after receipt, but no later than three hours after the package is received at the licensee's facility if received during the licensee's normal working hours, or eighteen hours if received after normal working hours.
- (2) Using a survey meter the package will be monitored for radiation. If found to be in excess of 0.01 microcuries per 100 square centimeters, the Radiation Safety Officer will be notified. The Radiation Safety Officer will validate the leakage and if he determines that there is an excess he shall notify the appropriate people and agencies, final delivery courier, and the Nuclear Regulatory Commission. (See Appendix C-6)

- (3) If no excess radiation is detected the package will be opened and again surveyed for excess radiation. Then the individual containers of RA material will be removed, using tongs, and the shipping container resurveyed for radiation.
- (4) The containers of material will then be put in the storage pit.
- (5) Shipping refuse will be monitored for contamination prior to disposal in accordance with Part 20, paragraph 20.301.

- b. Vehicle Placarding. All vehicles transporting or containing radioactive materials will bear a placard on four sides that bears the proper labelling according to D.O.T. specifications, the word "RADIOACTIVE". This placard approximately 6" X 30" will be placed on the vehicle only when the vehicle is transporting or storing radioactive materials.

The placard is black lettering on a safety yellow background. It is clearly understood that this placard will not be displayed if the vehicle is not carrying or storing radioactive materials.

- c. All containers carrying or storing or used for transporting radioactive materials will bear a tag with the identification of the radioactive materials, the quantity of the radioactive materials and the date that the radioactive materials was that particular quantity. The tag will also state "Caution - Radioactive Material".

6. Records Management

- a. Utilization Log - This log will contain the master file on each type or shipment of radioactive materials received and the distribution of each such shipment. This master file will be maintained at the facility. (Appendix A-4)
- b. Receipt and transfer records will be maintained in files to show at all times where material is to be located or if it is disposed of. (Appendix A-5)
- c. Personnel exposure records, film badge, TLD or dosimeter reports will be maintained in a separate file. All quarterly reports on each person using radioactive materials will be kept at the Prudhoe Bay, Alaska office. (Appendix A-6)
- d. Leak test records on all sealed sources will be maintained on each sealed source. These records will indicate leak testing at six month intervals. (Appendix A-7)
- e. Survey records which include building or storage area surveys conducted on a quarterly basis will be maintained in a file. These surveys will reflect in milliroentgens readings at a point on each side and the top of the storage area. (Appendix A-2)
- f. Vehicle surveys will be conducted at monthly intervals and these surveys will be maintained in a file. (Appendix A-3)
- g. Surveys will be conducted by monitoring a well bore at the surface prior to use of any radioactive material and remonitoring the well bore upon completion of the work. These numbers will be recorded. A survey meter or tool which is acceptable will be used for the monitoring process. Records of this survey performed on each job will be maintained in a file. (Appendix A-2)

Note: A master file of "a" thru "g" is on file at the Anchorage, Alaska office.

- a. Company personnel who have been trained in handling sealed sources shall be the only ones who perform operations involving the sources.

All customer personnel shall be required to be remote to these operations.

- b. Only the company approved handling tools will be used. (Appendix B-4)
- c. All sources are to be transported in the approved and locked source shipping containers. (Appendix B-5)
- d. Our standard neutron logging source assembly encloses a 3.0 curie Americium-241 Beryllium neutron source. A dose rate of approximately 16-18 mR/hr. (neutron and gamma) is present at one meter from the shielded source.
- e. Using the remote handling tools the source is removed from the shipping or transport container. The source is attached to the logging tool and placed inside of the well. When logging operation is finished, the logging operator will remove tool from well, utilizing remote handling tool, the source will be removed from the tool and placed back into the storage container. The time-distance factors must be used effectively when working with radioactive sources to keep exposure to a minimum. When utilizing the remote handling tools a safe distance is provided but care and practice are needed to decrease the handling exposure time. (Appendix B-2)
- f. Any sources that you are not familiar with, in handling and usage, contact the Radiation Safety Officer before using them in a logging job.

4. Radiation Surveys

- a. Pit source storage bunker - Remove storage or transport container from bunker. Place source in vehicle in secure position, (locked containment). Survey vehicle on all four sides. Record on Radioactive Monitoring Form 100. (Appendix B-3) Check passenger compartment to ensure level below 2mR/hr.
- b. Arrival at well site - Using low level survey meter, monitor the area before commencing job, and record. After job is finished remonitor area to determine there is no contamination around well site. Record on Form 100. After arriving at storage site monitor vehicle to show free of contamination.
- c. The following handling equipment must be present and used on well sites: gloves, handling tongs, protective clothing.

5. Leak Test Procedures

- a. Wipe tests on all sources must be performed at intervals not exceeding six months.
- b. Source will be wipe tested with Gulf Nuclear, Inc. Model LTK-1 Leak Test kit.
- c. Leak test kits will be mailed to Gulf Nuclear at Webster, Texas for counting.
- d. Reports will be sent back to licensee with leak test certificate.