

INSPECTION FINDINGS AND LICENSEE ACKNOWLEDGMENT

ELI II - New York

<p>1. LICENSEE Sinclair Oil Corporation 400 East Sibley Boulevard Harvey, Illinois 60426</p>	<p>2. REGIONAL OFFICE U. S. ATOMIC ENERGY COMMISSION REGION III, DIVISION OF COMPLIANCE 799 ROOSEVELT ROAD GLEN ELLYN, ILLINOIS 60137</p>
<p>3. LICENSE NUMBER(S) 12-00140-04</p>	<p>4. DATE OF INSPECTION June 27, 1969</p>

5. INSPECTION FINDINGS

- A. No item of noncompliance was found.
- B. Rooms or areas were not properly posted to indicate the presence of a RADIATION AREA. 10 CFR 20.203(b) or 34.42
- C. Rooms or areas were not properly posted to indicate the presence of a HIGH RADIATION AREA. 10 CFR 20.203(c) (1) or 34.42
- D. Rooms or areas were not properly posted to indicate the presence of an AIRBORNE RADIOACTIVITY AREA. 10 CFR 20.203(d)
- E. Rooms or areas were not properly posted to indicate the presence of RADIOACTIVE MATERIAL. 10 CFR 20.203(e)
- F. Containers were not properly labeled to indicate the presence of RADIOACTIVE MATERIAL. 10 CFR 20.203(f) (1) or (f) (2)
- G. A current copy of 10 CFR 20, a copy of the license, or a copy of the operating procedures was not properly posted or made available. 10 CFR 20.206(b)
- H. Form AEC-3 was not properly posted. 10 CFR 20.206(c)
- I. Records of the radiation exposure of individuals were not properly maintained. 10 CFR 20.401(a) or 34.33(b)
- J. Records of surveys or disposals were not properly maintained. 10 CFR 20.401(b) or 34.43(d)
- K. Records of receipt, transfer, disposal, export or inventory of licensed material were not properly maintained. 10 CFR 30.51, 40.61 or 70.51
- L. Records of leak tests were not maintained as prescribed in your license, or 10 CFR 34.25(c)
- M. Records of inventories were not maintained. 10 CFR 34.26
- N. Utilization logs were not maintained. 10 CFR 34.27

Edmund J. Ojarka
 Edmund Ojarka
 (AEC Compliance Inspector)

6. LICENSEE'S ACKNOWLEDGMENT

The AEC Compliance Inspector has explained and I understand the items of noncompliance listed above. The items of noncompliance will be corrected within the next 30 days.

 (Date) (Licensee Representative — Title or Position)

ORIGINAL: LICENSEE. COPIES: CO REGION CO HEADQUARTERS CO ENFORCEMENT

MAILED 6-27-69

A/58

REPORT COMPILED SHEET

Identifying Information

Type Report (Circle)
591 592

1. Licensee SINCLAIR OIL CORP
2. Address 400 EAST SIBLEY BOULEVARD
HARVEY, ILLINOIS, 60426
3. License No(s) 12-00140-04
4. Date of Inspection 6-27-69
5. Inspector OPARKA
6. Status of Compliance CLEAR

Items of Noncompliance

- | 7. Section of Regulation
or
License Condition | Details Paragraph |
|---|-------------------|
| A. _____ | A. _____ |
| B. _____ | B. _____ |
| C. _____ | C. _____ |
| D. _____ | D. _____ |
| E. _____ | E. _____ |
| F. _____ | F. _____ |
| G. _____ | G. _____ |

Classified Information

8. This report contains classified or business confidential information.
Yes No

OPARKA 7-8-69
Inspector Date

J. Mallan 7-23-69
Reviewer Date

Sinclair Oil Corporation
License No. 12-00140-04
June 27, 1969

HEALTH PHYSICS ANALYSIS

The AEC inspector found that the licensee's health physics program was noted to adequate as noted below:

- a. Dr. Snow appeared to be a knowledgeable individual in matters of radiation safety.
- b. The equipment, facilities and radiation detection instrumentation was found to be ~~adequate~~ ^{ADEQUATE}.
- c. Radiological safety procedures have been written to govern the use of licensed byproduct material.
- d. Physical radiation surveys and wipe-smear tests are made to determine compliance with the regulations.
- e. Personnel monitoring and ^{Assay} records indicated that no one has received any significant radiation exposures.
- f. Radiological data is being maintained adequately for commission inspection.

It can best be concluded that no undue hazard involving health and safety exists.

~~Therefore~~ The licensee has corrected the previous items of noncompliance found at time of the last April 8, 1968 inspection.

D E T A I L S

GENERAL INFORMATION

9. On June 27, 1969 an announced inspection was made on subject licensee's program conducted under license no. 12-00140-04.
10. The Illinois Department of Health was not notified of the impending inspection visit due to scheduling.
11. The following individuals were interviewed during the course of this inspection:
Dr. A. I. Snow, Chairman of the Radioisotope Committee and Radiological Safety Officer
Dr. G. A. Uhl, Research Chemical Engineer.
They furnished all the information contained in this report. All information is reported in substance unless otherwise indicated.

INSPECTION HISTORY

12. At the time of the last reinspection made on April 4, 1968, the licensee was held in noncompliance with the following items. Against 10 CFR 20.203(b)(1) for failure to post appropriate radiation caution signs of magenta and yellow background with symbol and the words "CAUTION - RADIOACTIVE MATERIALS" in areas where licensed byproduct material ^{WERE} stored. Against 10 CFR 20.203(b) for failure to post radiation caution signs of magenta and yellow background with symbol and the words "CAUTION - RADIATION AREA" in areas where a radiation area exists. Against License Condition No. 14D for failure to maintain records of leak tests of the sealed sources.

CORRECTION OF AREAS OF NONCOMPLIANCE

13. At the time of the June 27, 1969 reinspection, the licensee achieved compliance with regard to the previous items of noncompliance as follows: In order to correct the item of noncompliance against 10 CFR 20.203(b), areas where licensed byproduct material was stored was noted to be posted with appropriate radiation caution signs in colors of magenta with yellow background with symbol and the words "CAUTION - RADIOACTIVE MATERIAL". In order to correct the item of noncompliance against 10 CFR 20.203(e) all radiation areas were posted with appropriate radiation caution signs in colors of magenta with yellow background with symbol and words "CAUTION - RADIATION AREA". In order to correct the item of noncompliance against License Condition No. 14D the licensee is maintaining the results of each and every leak test made of all sealed sources in his possession. With this information, it appears that the licensee has corrected all of the

previous items of noncompliance found at the last April 8, 1968 reinspection.

PROGRAM

14. At the time of the June 27, 1969 reinspection the AEC inspector learned that since the last inspection of April 8, 1968 no licensed byproduct material had been utilized. According to Dr. Snow all of licensed material on hand had been kept in storage. An inventory of the amount of radioactive material on hand is affixed to this report as Appendix A.

ORGANIZATION

15. Since the last reinspection of April 8, 1968 the AEC inspector learned Atlantic Richfield Oil Company had acquired all of the interest in Sinclair Oil Corporation and as a result this particular facility will be called Atlantic Richfield Products Research Center. According to Dr. Snow the organization of this new research center is still in the development stage. Dr. Snow reported that he will send all of the organizational and administrative information to DML after everything has been finalized. In so far as the radioactive material program is concerned, Dr. Snow is ~~the~~ the Radiological Safety Officer and as such is responsible for seeing that radioactive material is used with due regard ^{for} radiation safety. There are two individuals assigned to working with radioactive material, namely, Mr. L. A. Baillie, Senior Research Chemist and Dr. G. A. Uhl. All the persons who are involved in handling licensed byproduct material under this license have had several years of experience in using radioactive material.

ADMINISTRATIVE CONTROL

16. As stated in previous reports an isotope committee approves the use of all licensed byproduct material. Dr. Snow is the chairman of this isotope committee and signs all procurement forms. The supervisor of any program maintains his own record for commission inspection with the exception of personnel monitoring and leak tests and by OSA records. Personnel Monitoring, leak tests and ~~records~~ ^{bioassay} records are maintained in the personnel apartment.

RADIOLOGICAL SAFETY PROCEDURES

17. Radiological Safety Procedures have been written in order to govern the use of all licensed byproduct materials at this research center. Anyone assigned to working with radioactive material is given a copy of this radiological safety procedures.

18. At the time of the inspection, Dr. Snow and Dr. Uhl had copies of the licensee's Operating ~~of~~ Emergency Procedures, copies of the Federal Regulation 10 CFR 20 and 10 CFR 34. They both demonstrated by answers to questions given to them by the AEC inspector that they were very familiar and acquainted with their contents. Further, both individuals appeared to be very competent in the use of material authorized in this license, related handling tools, and also survey instruments employed in their every ^{DAY} assignment.

FACILITIES

19. At the time of the June 27, 1969 reinspection the AEC inspector found that there had been no changes with respect to the licensee's facility. The bulk of the use of radioactive material is handled in "N" Nuclear Building. This building is ~~restricted~~ a restricted ^{AREA} in which only authorized persons of the organization are permitted in. All persons entering this facility are required to be monitored according to Dr. Snow.

STORAGE

20. It was learned that all licensed byproduct material not being used are stored in several areas of the nuclear building. The storage precaution are such that the licensed material can not be removed from place of storage. These storage precautions meet the requirements of 20.207.
21. It was further learned that the licensee maintains two ~~storage~~ storage facilities.
- One-5000 gal. Retention tank located in the floor of the Nuclear Building and according to Dr. Snow the materials in this tank are left to decay out.
- Further, the licensee ^{2ND STORAGE} area ~~is~~ located to the rear of the research facility, ~~restricted~~. This area is used specifically for keeping low level solid radioactive material.
- The material is usually collected and stored in 55 gal. drums pending disposition.

SURVEYS AND/OR EVALUATIONS

22. The AEC inspector learned since no radioactive material had been used since the last previous April 8, 1968 reinspection that no physical radiation surveys had been performed in the nuclear building. However, Dr. Snow emphasized that should the program resume to be as active as it had been in the past, ~~the~~ physical radiation surveys would continuously be made of the area in order to comply with 10 CFR 20.201(b). Dr. Uhl reported that within the last three weeks ~~the~~ wipe-smears ^{WERE MADE} of several areas in which licensed byproduct material have been previously used. The results of these wipe-smears were counted in the licensee's deep well counter. The results

of these wipe-smears showed that no radiation level over background existed on floors or benches of the nuclear building. Since no radioactive material had been used in the dynamometer rooms since the last April 8, 1968 reinspection Dr. Snow reported that no physical radiation surveys had been made of this particular program. It appears from this discussion that Dr. Snow is aware of the fact that physical radiation surveys are to be made in order to comply with the regulations.

PERSONNEL MONITORING

23. The licensee subscribes to film badge service from R. S. Landauer and Company on a biweekly basis. Each individual associated with the use of licensed material is required to wear a film badge. An examination of the supplier film badge records since the last reinspection of April 8, 1968, showed that no one working with activity had exceeded over 25% of $1\frac{1}{2}$ rem. In fact, all biweekly exposures were ~~observed~~ ^{observed} to be 0 millirem. The licensee is maintaining form AEC-5 for persons even though they have never exceeded 25% of $1\frac{1}{2}$ rem. Records further showed that Bioassay urinalysis is recommended by Dr. Snow for persons who handled tritium. The sample of the individual is sent to New England Nuclear Corporation of Boston, Massachusetts for counting. A review of New England Nuclear's bioassay results showed that all samples revealed less than .5 microcuries of tritium per ~~liter~~ ^{liter}. See Appendix B attached to the report.

POSTING AND LABELING

24. The AEC inspector found that all licensee's posting and labeling requirements were consistent with the applicable paragraphs of the Federal Regulations.

LEAK TESTING

25. The AEC inspector found that all sealed sources possessed under license no. 12-00140-04 are being leak tested by the licensee at intervals of six months or less. An examination of the licensee's leak test records show that the most recent test was made on June 13, 1969 and at that time less than 0.005 microcuries of removable contamination found. Based on this information, it appears that the licensee is complying with License Condition No. 14C and D. Further, it appears as a result of this information, the licensee has corrected the previous items of noncompliance found against License Condition No. 14D for failure to maintain records of leak tests made every six months.

WASTE DISPOSAL

26. The AEC inspector learned that 56 drums of waste material containing approximately 23 millicuries of various isotopes, namely cobalt 60, cesium 137, chrome 51 and iron 59 have been disposed of through California Nuclear Corporation of Sheffield, Illinois. These disposal records maintained by the licensee show compliance with 10 CFR 20.401(b).

LICENSE CONDITIONS

27. Each of the license conditions specified in License No. 12-00140-04 were discussed with Dr. Snow and he demonstrated through the discussion and with the records being maintained that he was complying with each of the license conditions.

OVEREXPOSURES OR EXCESSIVE LEVELS OF RADIATION

28. Dr. Snow reported that since the last reinspection of April 8, 1968 no one received an overexposure due to the material on hand. The licensee's film badge records from the supplier verified the fact that no one received an overexposure. Dr. Snow further reported that no excessive levels of radiation existed in unrestricted areas of the nuclear facility. Records in the licensee's possession verified the fact that unrestricted areas are less than 2 mr/hr whenever radioactive material is being used.

REPORT OF THEFT OR LOSS

29. Dr. Snow reported that since the last April 8, 1968 inspection, no licensed material had been lost or stolen.

INCIDENT OR UNUSUAL OCCURRENCES

30. Dr. Snow reported that since the last inspection of April 8, 1968, no incidents or unusual occurrences were noted.

RECORDS

31. The licensee possessed several physical radiation surveys to show that every effort is being made to control the program. Further, these survey records indicated compliance with 10 CFR 20.201(b) and 10 CFR 20.401(b).

MANAGEMENT DISCUSSION

32. At the conclusion of the inspection, Dr. Snow, Chairman of the Isotope Committee and Radiological Safety Officer, was informed that no items of noncompliance was observed or otherwise noted as a result of this June 27, 1969 reinspection. Form 591 was subsequently explained to Dr. Snow and a copy given to him at the conclusion of the inspection stated that no items of noncompliance were found.

APPENDIX A

Isotope Inventory June, 1969

C¹⁴

BaCO ₃	20 mc
n-octane	4.5 mc
dotriacontane	4.6 mc
Na-acetate	0.5 mc
Ethylene	0.5 mc
Isopropanol	0.2 mc
Isobutane	0.1 mc
propylene	0.05 mc
propane	0.05 mc
naphthalene	0.05 mc
cetane	0.09 mc
heneicesane	0.05 mc
ethyl iodide	0.1 mc
t-butyl alcohol	0.05 mc
benzoic acid	0.0025 mc
indole	0.0025 mc
methanol	0.02 mc
butene-1	0.1 mc
toluene	0.5 mc
Methylcyclopentane	0.5 mc

H³

H ₂ O	9.0 curies
Ethylcyclohexane	6.6 curies
Ethylbenzene	6.6 curies
H ₂	1.88 curies
Anisole	4110 mc
n-butane	410 mc
butene	94 mc
propane	94 mc
propylene	94 mc
benzene	47 mc
p-xylene	1 mc
pentamethyl benzene	3 mc
durene	9 mc
n-hexane	9 mc
lube stocks	213 mc

Other Sources

Kr ⁸⁵	1430 mc
Ni ⁶³	20 mc
Cl ³⁶	50 mc
Cs ¹³⁷	440 mc (3 sealed sources)
Cs ¹³⁷	300 mc (solution)
Sr ⁹⁰	30 mc (3 sealed sources)
Co ⁶⁰	4500 curies (sealed source)
Co ⁶⁰	20 mc (solution)

APPENDIX B



New England
Nuclear Corp.

575 Albany Street Boston, Massachusetts 02118
Telephone (617) 426-7311 Telex: 094-6582
Cable Address: Atomlight

June 27, 1969

Dr. A. I. Snow
Sinclair Research, Inc.
400 East Sibley Boulevard
Harvey, Illinois

Dear Dr. Snow:

Enclosed please find a copy of your bioassay results

dated July 1, 1968.

Sincerely yours,

NEW ENGLAND NUCLEAR CORPORATION

Arthur McEvoy

Arthur McEvoy
Supervisor *mp*
Assay Department

AM/mp

Central Files			
REC'D JUN 30 1969			
WDH		EMJ	
WRR		ME	
GAB		TF	
JEB		CS-1	
EHB		ESD	
MF		RR	
RLS		PWR	
DWY		THS	
CBB		AIS	
LEO		OHT	
FMW		DKV	

Sinclair Research Incorporated
400 East Sibley Boulevard
Harvey, Illinois

None Given

7/1/68

80-1

3
H

Urine Samples

63420	0.20 ml	Less than .5 uc/l
63421	0.20 ml	Less than .5 uc/l
63423	0.20 ml	Less than .5 uc/l
63424	0.20 ml	Less than .5 uc/l
63425	0.20 ml	Less than .5 uc/l

Remarks: Samples received 6/24/68.

cc: Cust./Circ.

M. Conley (2) ←

Invoice

M. Polvere

02253