

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

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.

a. NEW LICENSE

b. AMENDMENT TO:
LICENSE NUMBER

X 34-18233-01

c. RENEWAL OF:
LICENSE NUMBER

2. APPLICANT'S NAME (Institution, firm, person, etc.)

Reuter-Stokes Instruments, Inc.

TELEPHONE NUMBER: AREA CODE -- NUMBER EXTENSION
(216) 425-3755

3. NAME AND TITLE OF PERSON TO BE CONTACTED
REGARDING THIS APPLICATION

Eileen Openbrier-Staff Health Physicist

TELEPHONE NUMBER: AREA CODE -- NUMBER EXTENSION
(216) 425-3755, Ext. 503

4. APPLICANT'S MAILING ADDRESS (Include Zip Code)

(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)

Edison Park
8499 Darrow Road
Twinsburg, OH 44087

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED
(Include Zip Code)

Edison Park
8499 Darrow Road
Twinsburg, OH 44087

(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

(See Items 16 and 17 for required training and experience of each individual named below)

	FULL NAME	TITLE
a.	(NO CHANGE - SAME AS IN LICENSE)	
b.		
c.		

7. RADIATION PROTECTION OFFICER

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

L I N E NO.	ELEMENT AND MASS NUMBER A	CHEMICAL AND/OR PHYSICAL FORM B	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source) C	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME D
(1)	SEE ATTACHMENT FOR ITEM 8			
(2)				
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL
E

(1) SEE ATTACHMENT FOR ITEM 8

(2)

(3) 8606180055 860424
REGS LIC30
34-18233-01 PDR

(4)

9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE, WHICH EACH SEALED SOURCE WILL BE STORED OR USED.	NAME OF MANUFACTURER	MODEL NUMBER
	A.	B.	C.
(1)	SEE ATTACHMENT FOR ITEM 9		
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT	MANUFACTURER'S NAME	MODEL NUMBER	NUMBER AVAILABLE	RADIATION DETECTED (alpha, beta, gamma, neutron)	SENSITIVITY RANGE (milliroentgens/hour or counts/minute)
	A	B	C	D	E	F
(1)	(NO CHANGE - SAME AS LICENSE)					
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY NO CHANGE	☐ b. CALIBRATED BY APPLICANT Attach a separate sheet describing method, frequency and standards used for calibrating instruments. NO CHANGE
--	--

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
☐ (1) FILM BADGE NO CHANGE	NO CHANGE	☐ MONTHLY
☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD)		☐ QUARTERLY
☐ (3) OTHER (Specify): _____ _____ _____		☐ OTHER (Specify): _____ _____ _____

13. FACILITIES AND EQUIPMENT (Check where appropriate and attach annotated sketch(es) and description(s).)

☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC. ☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. ☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC. ☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.	NO CHANGE
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14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED NO CHANGE
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 CHANGE

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)	SEE ATTACHMENT FOR ITEM 9		
(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)	(NO CHANGE - SAME AS LICENSE)					
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY NO CHANGE	☐ b. CALIBRATED BY APPLICANT Attach a separate sheet describing method, frequency and standards used for calibrating instruments. NO CHANGE
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12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A.	SUPPLIER (Service Company) B.	EXCHANGE FREQUENCY C.
☐ (1) FILM BADGE NO CHANGE ☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD) ☐ (3) OTHER (Specify): _____ _____ _____	NO CHANGE	☐ MONTHLY ☐ QUARTERLY ☐ OTHER (Specify): _____ _____ _____

13. FACILITIES AND EQUIPMENT (Check where appropriate and attach annotated sketch(es) and description(s).)

- ☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

NO CHANGE

14. WASTE DISPOSAL

- ☐ a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED
 NO CHANGE
☐ 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 CHANGE

ATTACHMENT FOR ITEM 8

LINE NO.	ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL	NAME OF MANUFACTURER (IF SEALED SOURCE)	MAXIMUM NO. OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE
	A	B	C	D
5	Cobalt-60	Calibration or Check Sources	Isotope Products, Gamma Industries, or other engineering equivalent (in accordance with Reuter-Stokes Part No. 176A1637)	400 Microcuries

DESCRIBE USE OF LICENSED MATERIAL

E

Distribution in portable calibration units, to nuclear power reactor facilities authorized to receive the byproduct material pursuant to terms and conditions of specific licenses issued by the Nuclear Regulatory Commission.

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:

NO CHANGE

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)	b. CERTIFYING OFFICIAL (Signature)
	c. NAME (Type or print) George Palko
(1) LICENSE FEE CATEGORY: 3B	d. TITLE Vice President, Operations - R.S.O.
(2) LICENSE FEE ENCLOSED: \$ 120.00	e. DATE March 4, 1986

GENERAL  ELECTRIC

176A1637

REV 3

PURCHASED PART
SOURCE

CONT ON SHEET

SH NO.

176A1637

CONT ON SHEET

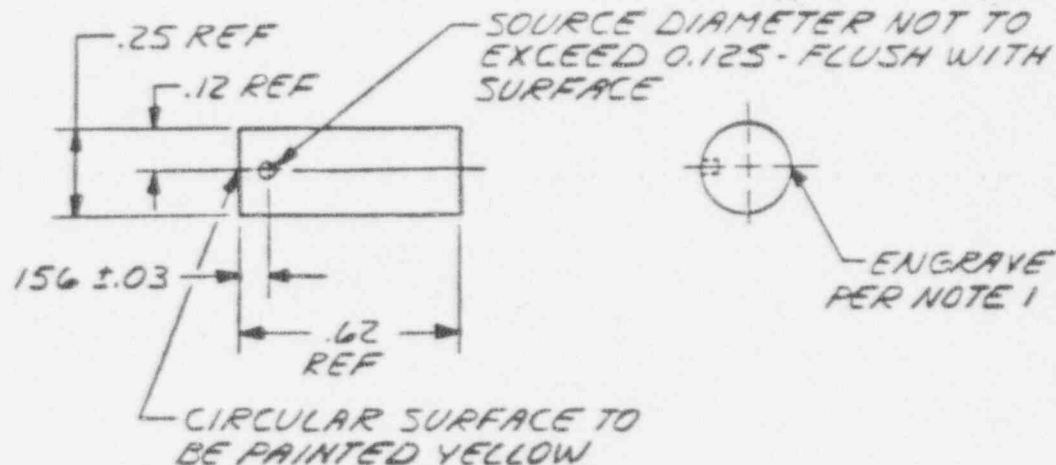
SH NO.

FIRST MADE FOR STANDARDS

CLASS II

FSC 1140-00/N

REVISIONS



NOTES:

1. ENGRAVE IN 0.12 LETTERS ON SIDE OF CAPSULE VENDORS SERIAL NUMBER "350 μ ci 60CO" AND DATE OF MANUFACTURE. CAPSULE TO BE MADE FROM ANY 300 SERIES STAINLESS STEEL ROD.
2. SOURCE IS TO BE SEALED AND MUST BE WATER TIGHT FOR MINIMUM OF 24 HOURS.
3. SOURCE STRENGTH IS 350 μ ci $\pm$ 10%
4. VENDOR SHALL SUPPLY CERTIFICATION THAT THE REMOVABLE CONTAMINATION IS LESS THAN OR EQUAL TO 0.005 μ ci WHEN TESTED IN ACCORDANCE WITH THE FOLLOWING PROCEDURE.
5. WHEN THE ACTIVE SURFACE IS WIPED VIGOROUSLY WITH A "Q-TIP" TISSUE, KOWIPE (OR EQUIVALENT) WETTED WITH ALCOHOL THE ACTIVITY ON THE TEST SURFACES SHALL NOT EXCEED 0.005 μ ci

AS MANUFACTURED BY: GAMMA INDUSTRIES OR 3M CO.
OR ENGINEERING APPROVED EQUIVALENT

MADE BY
E. MA. PIGNERONE 1145-67
RE
J. GREEN

APPROVALS

J.S.L

11-30-67

NED

SAN JOSE

DIV OR DEPT.

LOCATION

176A1637

CONT ON SHEET

SH NO.

PRINTS TO

JRG
11/15
3
8/2/67
8/11/67
RETRACED WITH
CHANGES NE 79564

280

33 62

69

253

DR8

277

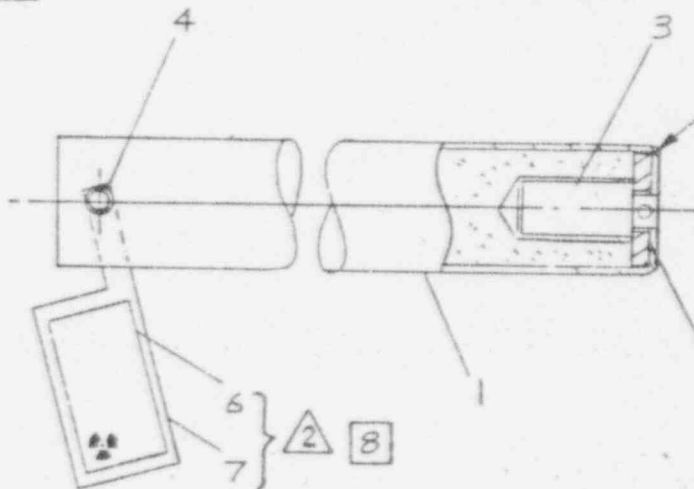
GENERAL ELECTRIC

175A8065

[illegible]

NOTES:

1. INFORMATION (ISOTOPE, AMOUNT & DATE) ON ITEM 6 TO BE SUPPLIED BY MANUFACTURING & WRITTEN WITH BALLPOINT PEN.
2. ITEMS 6 & 7 FOR USE DURING FABRICATION AND FOR SEPARATE SHIPMENT OF SOURCES (E.G. SPARE & RENEWAL PARTS). ITEMS 6 & 7 REMOVED WHEN ASSEMBLED INTO 846D959.



STAKE ITEM 2 IN PLACE
4 PLACES, 90° APART.
COMPLETED ASM MUST
SLIP FREELY THRU
.625^{+0.003}_{-.000} DIA. T/FIM
ANY HIGH SPOTS NEAR
STAKED AREA IF
NECESSARY.

562 O.D. x .187 I.D.
x .040 THK STK
175A 8842 P4

		UNLESS OTHERWISE SPECIFIED USE	APPLIED PRACTICES	SURFACES	TOLERANCES ON MACHINED DIMENSIONS				
					FRACTIONS	DECIMALS	ANGLES		
			167A2400	✓	+	+	± 5°		
DESCRIPTION OF GROUPS		REVISIONS			C	PRINTS TO			
7	14/77 J.L. AGUIRRE	JRS	4	MAY 2 1968 E. Margherone	EDM	1	JULY-15-66 C. C. C. C. C.	WT	058C
NE 79969 CHCD JRG (JRS)			ADDED MATL IDENT & DIM'S FOR ITEM 2			SOURCE WAS 80 C OF CO-60			
8	8/77 B. T. J. 3-28-74	KRS	5	11/2/77 E. Margherone	WT	2	11/2/77 E. Margherone	WT	
NE 14909			ERASED OLD PL INFO			NE 14909			
NE 149090 J.L. Aguirre CHK BY: J.L. AGUIRRE			6	11/2/77 E. Margherone	J	3	DEC 6-67 E. Margherone	EDM	
NE 16452			EN 713212			NE 16452			
MADE BY: J.L. Aguirre		APPROVALS	NED		DIV OR DEPT	175A 8065			
ISSUED: J.L. Aguirre		J.L. Aguirre	SAN JOSE, CALIF		LOCATION	PRINT ON SHEET			
JULY 12 1966		7-1-66				SM NO.			

NUCLEAR ENERGY DIVISION, SAN JOSE, CA

[illegible]

GENERAL ELECTRIC

NUCLEAR ENERGY DIVISION, SAN JOSE, CA

PL 117C1739

TITLE		SHIELD & GUIDE		DESCRIPTION		DOC STA		GROUP NUMBER AND QUANTITY		U/M		SRC		SECT		REV	
ITEM NO.	DOCUMENT TYPE	NAME	IDENTIFICATION	DOC STA	EIC	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012
001		GUIDE	136B1719001			1								NO		ACT.	5
002		SHIELD	175A8068G001			1								NO			
003		SHIELD	175A8058G002			1								NO			
004		SHIELD	846D947G001			1								NO			
005		SUPPORT	176A1683P001			2								NO			
006		COVER SHIELD	175A9047G001			1								NO			
007		LEVER	175A8066P001			3								NO			
008		PIN	175A8085P001			1								NO			
009		COLLAR	175A8264P003			6								NO			
010		SOURCE	175A8065G001			1								NO			
011		SHIELD & GUIDE	117C1739P011			1								NO			
012		LEAD (SHOT)	248A9140P009			12								NO			
013		SCREW, MACH, PNH	N80P15024C			AR										CHG	
014		#8-32X1.50 WASHER, PLAIN	N402P8C			AR										CHG	
015		#8 WASHER, STL SPR LK	N405P8C			AR										CHG	
016		NUT, MSCR, HEX	N210P13C			AR										CHG	
017		#8-32 SPACER	142A5306P010			1								NO			
018		BRACKET	175A8030P001			1								NO			
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ATTACHMENT 4 - PARTS LIST

PL 117C1739

LAST ITEM NO. USED - 020

DATE

MO.

DAY

YEAR

EDP

MADE BY

GENERAL ELECTRIC

176A1649

REV NO. 1

TITLE

PURCHASE PART

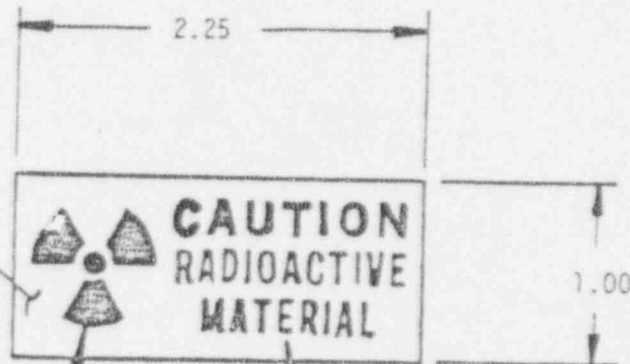
CONT ON SHEET F

176A1649

CONT ON SHEET F

EN NO. 1A

FIRST MADE FOR STANDARDS

YELLOW
BACKGROUNDMAGENTA LETTERS (SEE NC
TYPRADIOACTIVE INSIGNIA
(MAGENTA)

NOTES: 1

1. ADHESIVE BACKING.

2. WORD "MATERIALS" ALSO ACCEPTABLE.

APPROVED VENDOR: W. H. BRADY CO.

CAT. #RAD 2-A, CAT# 45342 1

SUBSTITUTION REQUIRES ENGRG APPROVAL

MADE BY <i>E. Margulies</i> 11-17-67	APPROVALS <i>JOE</i> 11-30-67	NCI SAN JOSE	DIV OR DEPT	176A1
ISSUED <i>E. Margulies</i> DEC. 6-67			LOCATION	CONT ON SHEET F

FF-902-WF (10-61)
PRINTED IN U.S.A.

GENERAL ELECTRIC

136B2302

TITLE ASSY

136B2302

UNLESS OTHERWISE SPECIFIED USE THE FOLLOWING:—
TOLERANCES ON DIMENSIONS
FRACTIONS DECIMALS

APPLIED PRACTICES

SURFACES

CI

GENERAL ELECTRIC

NP258174

PL IDENT: NAMEFLATE

REV NO 0

TITLE

CONT ON SHEET F

SH NO. 1

NP258174

NAMEFLATE

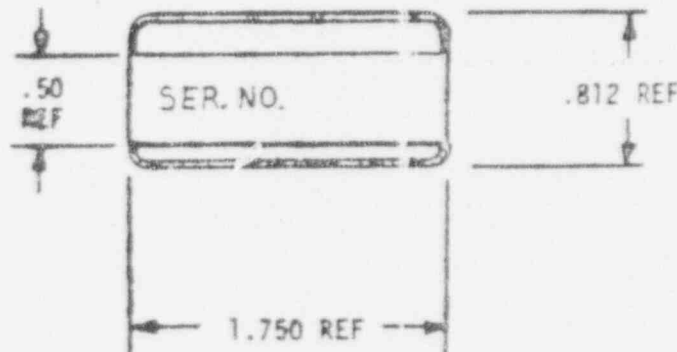
CONT ON SHEET F SH NO. 1

FIRST MADE FOR SENSOR & CONVERTER

MAKE FROM NP244752

FCF 194X927

REVISIONS



NOTES:

1. TO MARK IN DATA AREA, USE AN ELECTRIC TYPEWRITER SET AT MAXIMUM STRIKING FORCE.
2. MAXIMUM OF 3 LINES WITH 20 CHARACTERS PER LINE.
3. ~~XXXXXXXXXXXX~~ SERIAL NO. TO BE SUPPLIED BY MFG.

A18

6

CONTROL NO. 80080

MADE BY R2164 MAR 25, 1970

APPROVED

NID

DIV ON

NP258174

BY R2164 APR 21-70

K. DETH

SAN JOSE, CALIF.

LOCATION

CONT ON SHEET F

SH NO. 1

CODE IDENT NO.

ATTACHMENT FOR ITEM 9

The Cobalt-60 sealed sources shall be stored as delivered in the approved transport container. The packaged radioactive material will remain in a controlled area. External radiation readings shall be monitored such that we will maintain levels on contact below 10mR/hr, and at 1 meter below 1mR/hr. If necessary, we will provide additional shielding for the sources to reduce exposure rates.

ATTACHMENT 1

