



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Mr. Carlton E. Thorne, Director
Office of Nuclear Export Control
Bureau of Oceans and International
Environmental and Scientific Affairs
U.S. Department of State
Washington, D.C. 20520

Dear Mr. Thorne:

Enclosed is an export license application from Reuter-Stokes, Inc., dated November 12, 1990, for the export of a fission counter and compensated ionization chamber for use at the Institute Politechnico for Nuclear Research in Mexico.

Before taking action on this request, we would appreciate your obtaining necessary assurances under Section 109 of the Act and receiving your views, from the overall perspective of the Executive Branch, as to whether the proposed export meets the other applicable criteria in the Atomic Energy Act of 1954 as amended by the Nuclear Non-Proliferation Act of 1978.

Sincerely,

Ronald D. Hauber, Assistant Director
Exports, Security, and Safety Cooperation
International Programs
Office of Governmental and Public Affairs

Enclosure:
Appl. dtd. 11/12/90
(XCOM1050 - Mexico)

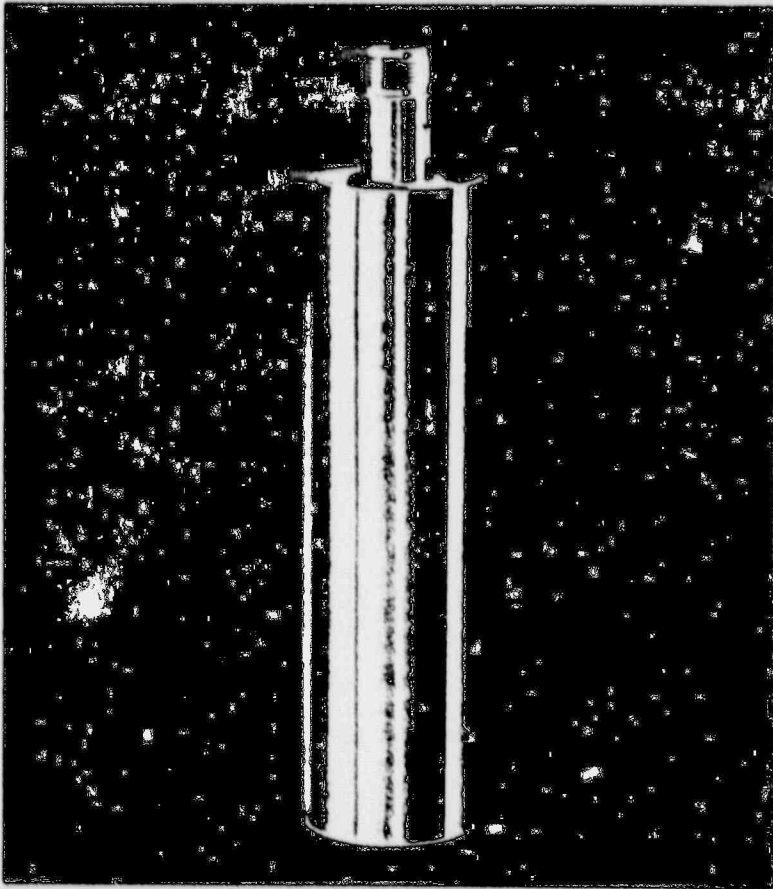
cc w/Enclosure:
T. Hart, DOE
R. DeLaBarre, DOS
N. Martin, DOE
M. Rosenthal, ACDA
L. Burdick, DOD
G. Kuzmycz, DOC

9011290322 901121
PDR XPORT
XCOM-1050 PNU

APPLICATION FOR LICENSE TO EXPORT NUCLEAR
MATERIAL AND EQUIPMENT (See Instructions on Reverse)

1. APPLICANT'S USE		a. DATE OF APPLICATION 11/12/90		b. APPLICANT'S REFERENCE 890638		2. NRC USE		a. LICENSE NO. XCOM150		b. DOCKET NO. 11004377			
3. APPLICANT'S NAME AND ADDRESS						RIS 2S2		4. SUPPLIER'S NAME AND ADDRESS (Complete if applicant is not supplier of material)				RIS	
a. NAME Reuter-Stokes, Inc.						b. STREET ADDRESS 8499 Darrow Road, Edison Park						a. NAME	
c. CITY Twinsburg,						STATE OH		ZIP CODE 44087		b. STREET ADDRESS			
d. TELEPHONE NUMBER (Area Code - Number - Extension) (216) 425-3755						c. CITY				STATE		ZIP CODE	
5. FIRST SHIPMENT SCHEDULED		6. FINAL SHIPMENT SCHEDULED		7. APPLICANT'S CONTRACTUAL DELIVERY DATE		B. PROPOSED LICENSE EXPIRATION DATE		9. U.S. DEPARTMENT OF ENERGY CONTRACT NO. (If Known)					
12/15/90				30 days after receipt of export License		12/15/91							
10. ULTIMATE CONSIGNEE						RIS MX-C		11. ULTIMATE END USE (Include plant or facility name)					
a. NAME (ININ) Institute Nacional de Investigaciones Nucleares						At Institute Politecnico for Nuclear Research							
b. STREET ADDRESS Carretera-Mexico-Toluca Km 36.5						11a. EST. DATE OF FIRST USE 1/1/91							
c. CITY - STATE - COUNTRY Salazar, Edo. de Mexico						13. INTERMEDIATE END USE							
12. INTERMEDIATE CONSIGNEE						RIS		Purchaser - will not take possession. will be shipped directly from Reuter-Stokes.					
a. NAME The Andrews Group, Int'l Inc.						13a. EST. DATE OF FIRST USE							
b. STREET ADDRESS 1800 Augusta, Suite 116						15. INTERMEDIATE END USE							
c. CITY - STATE - COUNTRY Houston, TX 77067						15a. EST. DATE OF FIRST USE							
14. INTERMEDIATE CONSIGNEE						RIS							
a. NAME													
b. STREET ADDRESS													
c. CITY - STATE - COUNTRY													
16. NRC USE		17. DESCRIPTION (Include chemical and physical form of nuclear material; give dollar value of nuclear equipment and components)				18. MAX. ELEMENT WEIGHT		19. MAX. WT. %		20. MAX ISOTOPE WT.		21. UNIT	
		P6-1608-110 Fission Counter for Research Control for Reactor Control (Source Range)				1.87 Uranium		93%		1.74 U235		1	
		C1-2514-115 Compensated Ionization Chamber				-		-		-		-	
22. COUNTRY OF ORIGIN - SOURCE MATERIAL		USA		23. COUNTRY OF ORIGIN - SNM WHERE ENRICHED OR PRODUCED		USA		24. COUNTRIES WHICH ATTACH SAFEGUARDS (If Known)					
								11/11/90					
25. ADDITIONAL INFORMATION (Use separate sheet if necessary) A P6-1608-110 has approximately 1.87 gms Uranium, 93% enriched in U 235. Therefore, Reuter-Stokes will ship direct to ININ, once license is approved. See attached data sheets and Letter of Assurance.													
26. The applicant certifies that this application is prepared in conformity with Title 10, Code of Federal Regulations, and that all information in this application is correct to the best of his/her knowledge.													
27. AUTHORIZED OFFICIAL Virginia T. Young				a. SIGNATURE Virginia T. Young				b. TITLE Export Control Coordinator					

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RS-P6-1608-110 Fission Counter

For Reactor Control (Source Range)

The RS-P6-1608-110 is a fission counter for use in a mixed neutron and gamma flux.

It has special advantages over other source range neutron counters (BF_3 and B-10) in applications where the detector must operate while exposed to high gamma flux ($> 10^9$ R/hr).

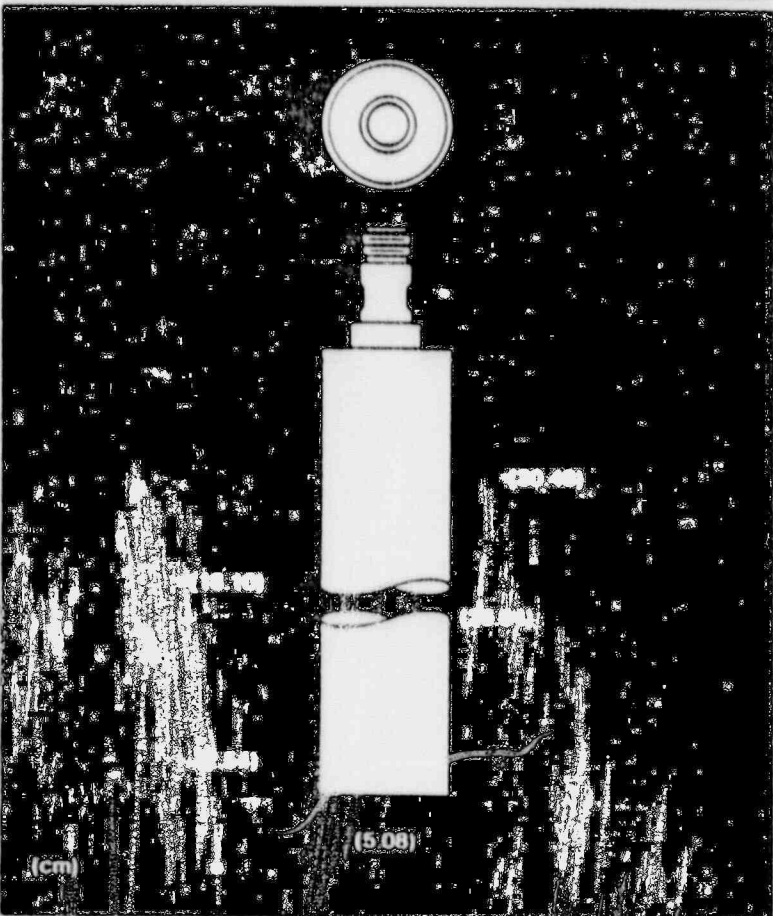
In such cases, the very large fission pulses permit discrimination against gamma pulses and pulse pile-up because of the high neutron-to-gamma signal ratio. B-10 and BF_3 counters would experience gamma pulse pile-up to the extent that they cannot be operated satisfactorily.

An additional advantage of a fission counter in source range application is that it does not suffer the rapid lifetime degradation common to B-10 and BF_3 counters.

In all potential applications the inherent low sensitivity (0.7 cps/nv in 0 R/hr) must be weighed against the advantage of satisfactory performance (with reduced neutron sensitivity) in a high gamma environment.

In all cases of operation in a high gamma flux, performance is greatly dependent on associated electronics. High count-rate electronics are required for optimum performance.

The unit is constructed of aluminum alloy for minimum neutron absorption and residual activity. All seals are ceramic-to-metal. Insulators are high purity alumina.



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RS-C1-2514-115 Compensated Ionization Chamber

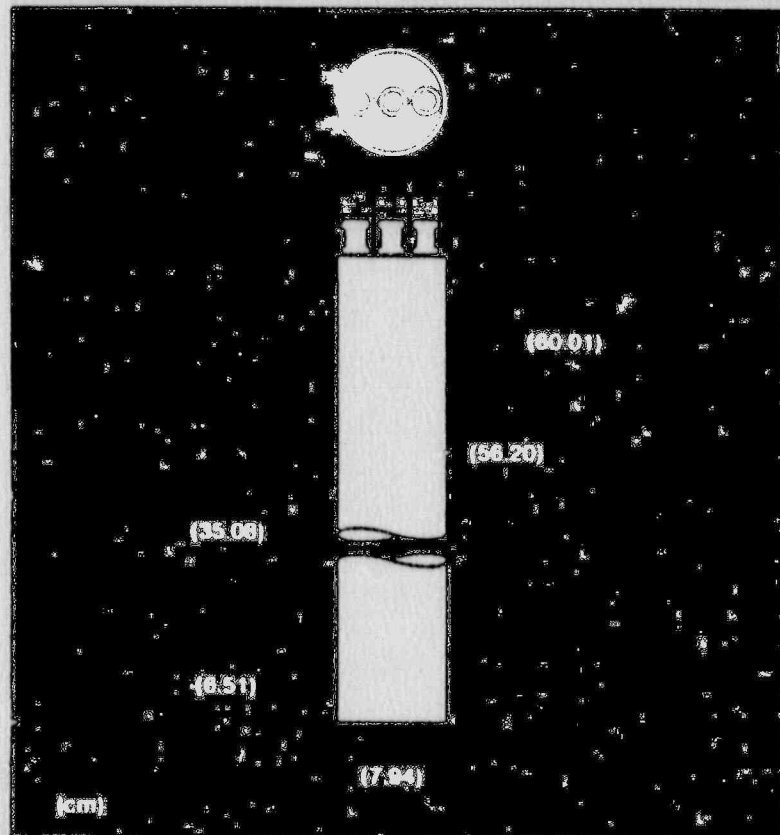
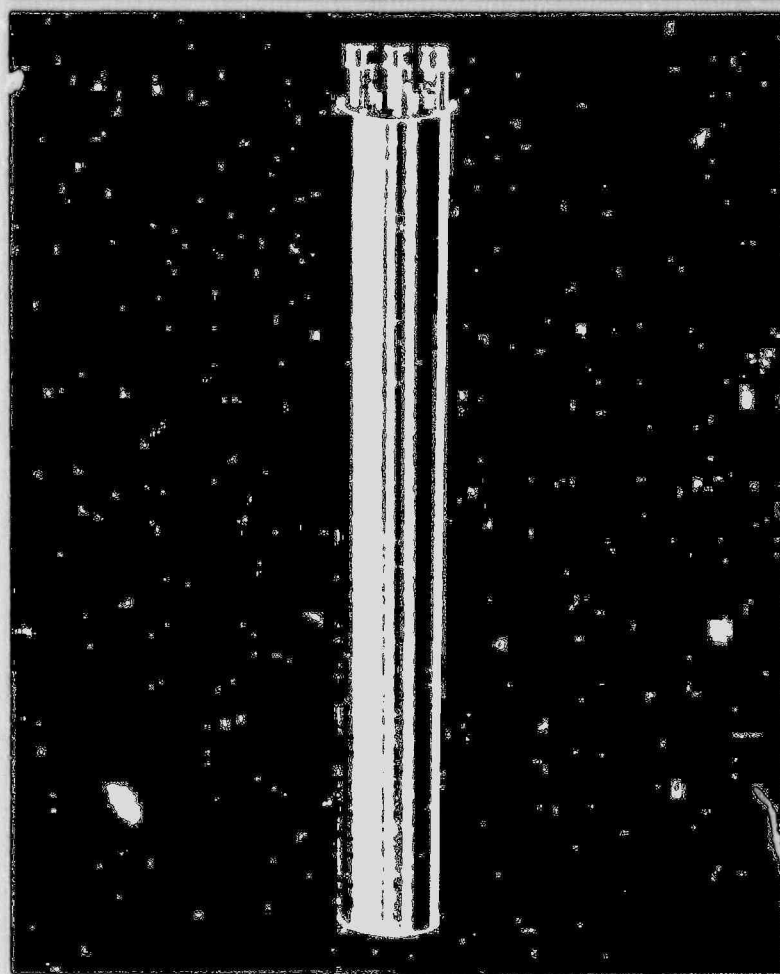
For Reactor Control (Intermediate/Power Range)

The RS-C1-2514-115 is an electrically compensated ionization chamber for measuring thermal neutron flux over the range 2.5×10^2 to 2.5×10^{10} n_v. It is designed for use in a mixed neutron and gamma flux where the gamma radiation is a significant portion of total radiation. Under this condition, the gamma current is a large portion of the total ionization current produced in the chamber, and compensation is required.

Compensation is provided by a chamber section sensitive to gamma rays only. With a negative voltage applied to the compensating electrode and positive voltage applied to the high voltage electrode, the output currents are subtracted electrically and neutron current alone is measured. The required compensating voltage is dependent upon gamma intensity and energy. Normally, it is in the range of 20 to 40 volts, but each chamber should be calibrated for compensating voltage before use.

Concentric cylinders with boron coating provide the neutron sensitive area. 1100 Aluminum is used in construction to minimize neutron absorption and residual activity. All seals are directly bonded ceramic-to-metal. Insulators are high purity alumina ceramic. Insulators have been designed to insure stable, long-term, noise-free operation of the chamber.

The detector envelope is heliarc welded. The entire structure is a rugged assembly capable of withstanding severe shock, vibration and temperature extremes.





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Centro Nuclear de México; 17 de octubre de 1990.

instituto nacional de investigaciones nucleares

REUTER STOKES INC.
EDISON PARK
8499 DARROW ROAD
TWINSBURG, OHIO. 44087

OFFICE OF NUCLEAR EXPORT AND IMPORT CONTROL.
BUREAU OF OCEANS AND INTERNATIONAL
ENVIROMENTAL & SCIENTIFIC AFFAIRS.
U. S. DEPARTMENT OF STATE
WASHINGTON, D. C. 20520

Att'n.: Robyn DeLaBarre.

Haciendo referencia a la orden de compra número 220-1236-90150 de la compañía The Andreus Group International, Inc. a la compañía Reuter-Stokes, Inc. para la compra de una Cámara de Ionización Compensada, Modelo NS-C1-2514-115 y un Contador de Fisión Modelo RS-PS-1608-110. el Instituto Nacional de Investigaciones Nucleares, por este conducto, certifica que el equipo amparado por la orden de compra anteriormente citada, no será transferido a ningún otro organismo sin consultar y recibir la aprobación del Gobierno de los Estados Unidos de Norte América y que dicho equipo será utilizado estrictamente para fines pacíficos en la exclusividad para el Instituto Nacional de Investigaciones Nucleares.

ATENTAMENTE

M. en C. RUPERTO MAZON RAMIREZ.

GERENTE DEL REACTOR

c.c.p. Expediente del Reactor.



XCOMIO:
11004371

Reuter-Stokes

Reuter-Stokes, Inc.
Edison Park
8499 Darrow Road, Twinsburg, Ohio 44087
216 426 3755, Fx: 426 4045

DRAFT FOR REUTER-STOKES

Attn: Roybn DeLaBarre

Referencing the purchase order 220-1236-90150 for The Andrews Group International, Inc. and Reuter-Stokes, Inc. for the purchase of an Compensated Ionization Chamber, Model RS-C1-2514-115 and a Fission Counter Model RS-P6-1608-110, for the National Institute of Nuclear Investigations. We certify that the equipment covered under this contract of which the order was previously quoted, will not be transferred to any other organization without consulting the government of the United States of North America, and that the above equipment will be utilized strictly for pacific purposes exclusively by the National Institute of Nuclear Investigations.

Yours truly,

M. en C. Roberto Mazon Ramirez