

PAGE 1 OF 7

4/18/01

CABINET FOR HEALTH SERVICES  
DEPARTMENT FOR PUBLIC HEALTH  
RADIATION HEALTH AND TOXIC AGENTS BRANCH  
275 EAST MAIN STREET  
FRANKFORT, KY. 40621-0001  
M.S. 75HS 2E-D

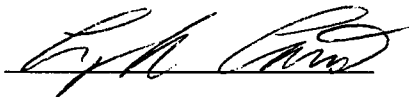
ATTN: VICKI D. JEFFS, SUPERVISOR

SUBJECT: AMENDMENT TO RLL-1 SERIES REGISTRY

REF. REGISTRY: KY-576-D-113-B

ENCLOSED ARE THE CLARIFICATIONS TO THE AMENDMENT PER OUR  
TELEPHONE CONVERSATION. CHANGES ARE MARKED IN THE BORDER  
WITH BLACK BARS.

RESPECTFULLY;



CRAIG A. CARIS  
QUALITY MANAGER

DATE: 3/22/01            RESUBMITTED WITH CLARIFICATIONS PER  
TELEPHONE CONVERSATION ON 4/18/01

RONAN ENGINEERING COMPANY  
MEASUREMENTS DIVISION  
8050 PRODUCTION DRIVE  
FLORENCE, KY. 41042-3028

MANUFACTURER / DISTRIBUTOR

PHONE (859) 342-8500

CONTACTS: THOMAS NIINEMETS - GENERAL MANAGER  
CRAIG CARIS - QUALITY MANAGER

DEVICE TYPE: SOURCE HOLDER

MODEL: RLL-1 SERIES

OTHER COMPANIES INVOLVED: NOT APPLICABLE

RADIOACTIVE SOURCE MODEL DESIGNATION:

ISOTOPE PRODUCTS LABORATORIES; MODEL PHI SERIES SOURCES  
CAPSULE A3224 - CS-137 & CO-60

AEA TECHNOLOGIES (AMERSHAM); MODEL CDC.700    CAPSULE X7  
CS-137 ONLY

RADIONUCLIDES: CESIUM-137, COBALT-60

MAXIMUM ACTIVITY: 900 MICROCURIES OF CS-137 OR  
200 MICROCURIES OF CO-60  
NO SINGLE SOURCE TO EXCEED 90 MICROCURIES  
OR  
(1) SOURCE NOT TO EXCEED 900 MICROCURIES  
OF CS-137  
(1) SOURCE NOT TO EXCEED 200 MICROCURIES  
CO-60

LEAK TEST FREQUENCY: NOT REQUIRED WHEN: NO SINGLE SOURCE  
EXCEEDS 90 MICROCURIES  
LEAK TEST IS REQUIRED WHEN: A SINGLE  
SOURCE EQUAL TO OR GREATER THAN 100  
MICROCURIES IS USED.

PRINCIPAL USE CODE: (D) GAMMA GAUGES

CUSTOM DEVICE: NO

CUSTOM USER: NOT APPLICABLE

CHANGES TO PAGE 2

SUMMARY DESCRIPTION: (ADDED SINGLE SOURCE SIZES)

THE MODEL RLL-1 SERIES SOURCE HOLDERS ARE INSTALLED INTO SHIELD ASSEMBLIES APPROPRIATE TO THE SPECIFIC APPLICATION. EACH SOURCE HOLDER MAY CONTAIN A SINGLE SOURCE OR MULTIPLE SOURCES. WHEN MULTIPLE SOURCES ARE USED, EACH SOURCE CONTAINS NO MORE THAN 90 MICROCURIES OF CESIUM-137 OR COBALT-60. WHEN SINGLE SOURCES ARE USED, EACH SOURCE CONTAINS NO MORE THAN 900 MICROCURIES OF CS-137 OR 200 MICROCURIES OF CO-60. THE INDIVIDUAL SOURCES ARE ENCLOSED IN A 1/4 INCH DIAMETER STAINLESS STEEL SOURCE TUBE. THE SOURCE TUBE IS INSIDE A 3/4 INCH DIAMETER STAINLESS STEEL TUBE. STAINLESS STEEL PLUGS ARE WELDED TO THE ENDS OF THE TUBE TO PREVENT SOURCE REMOVAL.

NOTE: THIS CHANGE DOES NOT AFFECT THE SOURCE CAPSULE MODEL NUMBERS OR THE PHYSICAL SIZE OF THE SOURCE CAPSULES.

REVISED ATTACHMENT 1 FIGURE A, ADDED ATTACHMENT 1 FIGURE A(i)

CHANGES TO PAGE 4 (ADDED FIGURE D(i) & D(ii))

LABELING:

AN ETCHED STAINLESS STEEL LABEL AS SHOWN IN ATTACHMENT 1 FIGURES D, D(i) AND D(ii) FOR GENERAL LICENSEES AND FIGURE E FOR SPECIFIC LICENSEES WILL BE ATTACHED TO THE SOURCE HOLDER BY THE USE OF HARDENED STAINLESS STEEL DRIVE SCREWS OR WELDING. DUE TO THE ENVIRONMENTAL CONDITIONS WHERE THE SOURCE HOLDER IS SOMETIMES USED, SILKSCREEN AND OR PAINT WILL NOT SURVIVE. FOR THIS REASON, RONAN IS REQUESTING AN EXEMPTION FROM THE CONVENTIONAL COLOR REQUIREMENTS OF 10 CFR 20.1901.

CHANGES TO PAGE 5 (ADDED FIGURE D)

RADIATION PROFILES: SEE ATTACHMENT 2 FIGURES A, B, C AND D

CHANGES TO PAGE 6 (ADDED LEAK TEST REQUIREMENT FOR SINGLE SOURCES EQUAL TO OR GREATER THAN 100 MICROCURIES)

LEAK TESTING: DEVICES WITH MULTIPLE SOURCES LESS THAN 100 MICROCURIES EACH.

THE RLL-1 SOURCE HOLDER USES SOURCE CAPSULES THAT CONTAIN LESS THAN 100 MICROCURIES OF CS-137 OR CO-60. EACH SOURCE HAS BEEN INDEPENDENTLY TESTED AND CERTIFIED BY THE MANUFACTURER AS A SPECIAL FORM DEVICE.

DUE TO THE LOW ACTIVITY LEVEL OF THE INDIVIDUAL SOURCES, RONAN ENGINEERING IS REQUESTING THAT THE END USER NOT BE REQUIRED TO LEAK TEST THE DEVICE WITH MULTIPLE SOURCES.

LEAK TESTING: DEVICES WITH A SINGLE SOURCE EQUAL TO OR GREATER THAN 100 MICROCURIES

A THREE YEAR WIPE TEST INTERVAL IS REQUESTED FOR THE RLL-1 DEVICE WITH SINGLE SOURCE CAPSULES. THIS REQUEST IS BASED ON THE DESIGN SAFETY FEATURES OF THE RLL-1 AND PROVEN RELIABILITY OF THE SPECIAL FORM SOURCES.

ATTACHMENT 1  
REVISED FIGURE A UPDATED MOUNTING TABS AND RADIATION DIRECTION ARROW.

CORRECTED VIEW OF SHIPPING COVER. COVER WAS ORIGINALLY SHOWN AS GOING THE FULL LENGTH OF THE SHIELD INSTEAD OF COVERING THE BEAM PORT. THE DEVICE SHIELD HAS PERMANENTLY INSTALLED SHIELDING TOP AND BOTTOM.

ADDED FIGURE A(i) LABELING INSTRUCTION FOR SINGLE AND MULTIPLE SOURCE CONFIGURATIONS.

REVISED FIGURE B TO SHOW CONFIGURATION WITH A SINGLE SOURCE CAPSULE. REMOVED PLATE AND CAUTION LABEL FROM TOP OF TUBE. THE SOURCE HOLDER CAN ONLY BE USED WHEN PERMANENTLY INSTALLED INTO A SHIELD ASSEMBLY.

REVISED FIGURE D CHANGED TITLE BLOCK TO SPECIFY; USE WITH MULTIPLE SOURCES LESS THAN 100 $\mu$ Ci EACH.

ADDED FIGURE D(i) GENERAL LICENSE LABEL FOR RLL-1 DEVICES WITH A SINGLE SOURCE CONTAINING UP TO 900  $\mu$ Ci CS-137 OR 200  $\mu$ Ci CO-60.

ADDED FIGURE D(ii) ETCHED STAINLESS STEEL LABEL " LEAK TEST REQUIRED"  
LABEL TO BE INSTALLED WITH HARDENED STAINLESS STEEL DRIVE SCREWS DIRECTLY BELOW CAUTION LABEL WHEN A SINGLE SOURCE CAPSULE EQUAL TO OR GREATER THAN 100  $\mu$ Ci IS USED.  
REF. ATTACHMENT 1 FIGURE A(i).

ATTACHMENT 2 ADDED FIGURES D AND D(i) ISO DISTANCE CURVES FOR RLL-1 DEVICE WITH SINGLE 900  $\mu$ Ci CS-137 AND 200 $\mu$ Ci CO-60 SOURCE CAPSULES.

ATTACHMENT 3 CHANGED TITLE TO CLARIFY THAT MANUAL IS FOR RLL-1 DEVICES WITH MULTIPLE SOURCES LESS THAN 100 MICROCURIES EACH.

ATTACHMENT 4 FOR SPECIFIC LICENSEES - NO CHANGES

ADDED ATTACHMENT 5 GENERAL LICENSE MANUAL FOR RLL-1 DEVICES  
WITH A SINGLE SOURCE CONTAINING UP TO 900  
MICROCURIES OF CS-137 OR 200 MICROCURIES  
OF CO-60. WITH LEAK TEST PROCEDURES

CORRECTED PICTORIAL VIEW OF SOURCE HOLDER IN THE INSTALLATION  
INSTRUCTIONS RONAN DRAWING D-16070-K.

 4/18/01

CRAIG A. CARIS  
QUALITY MANAGER

DATE	BY	REVISION RECORD	DR	CR
11/16/98	3	REV RELEASE FOR IS	RLC	
10/27/98	1	ISSUED BY: RICKY WHEELER, GPO/MS	RLC	
8/20/98	2	ISSUED BY: RICKY WHEELER, GPO/MS	RLC	
4/16/98	2	ISSUED BY: RICKY WHEELER, GPO/MS	RLC	

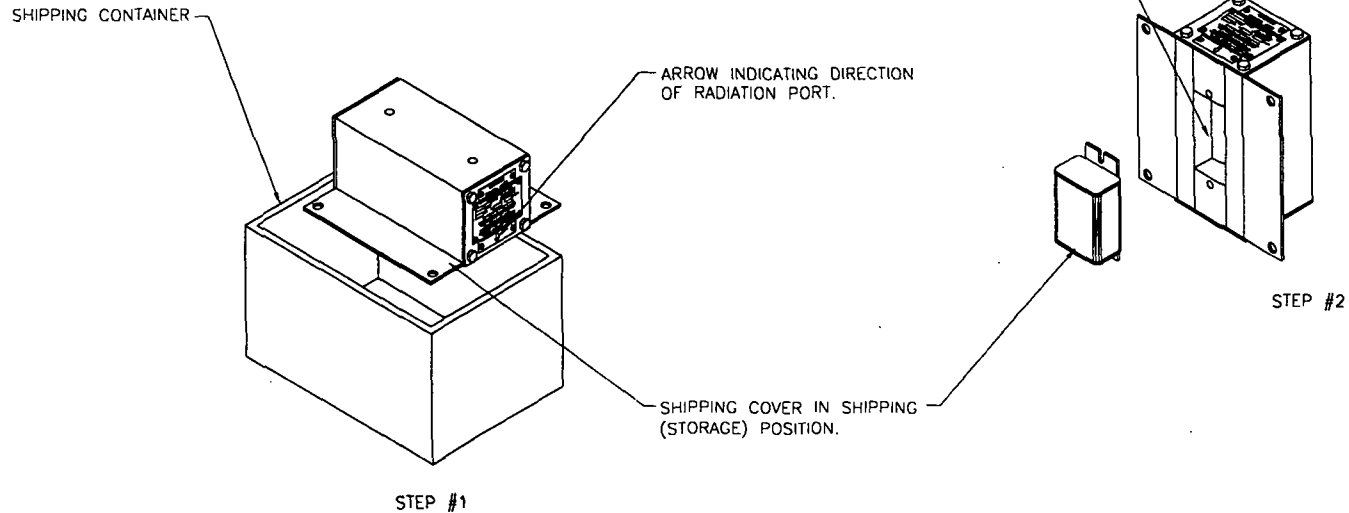
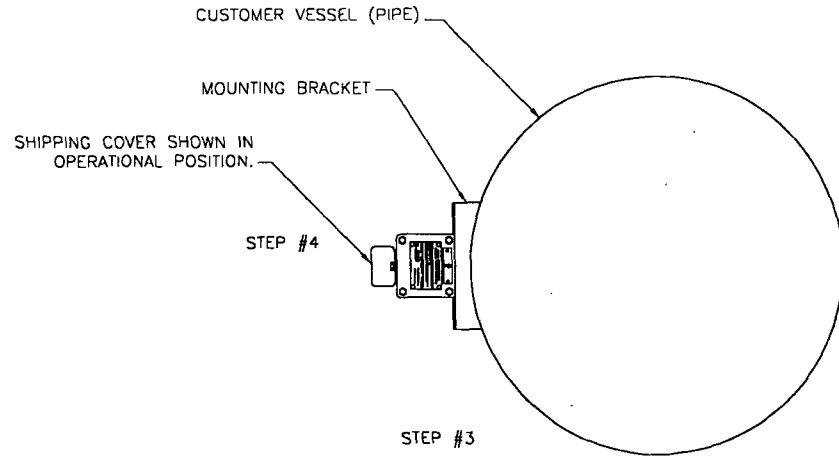
**WARNING:**  
PRIOR TO INSTALLATION OF SOURCE HOLDER, MAKE SURE THAT MOUNTING BRACKETS ARE ATTACHED TO CUSTOMER'S VESSEL (PIPE).

- STEP #1  
1. REMOVE SOURCE HOLDER FROM SHIPPING CONTAINER. YOU'LL SEE ARROWS INDICATING RADIATION DIRECTION. RADIATION PORT IS COVERED WITH SHIPPING COVER.
- STEP #2  
1. REMOVE SHIPPING COVER (DO NOT DISCARD MOUNTING SCREWS). HOLD SOURCE HOLDER SO RADIATION PORT AIMS AWAY FROM YOUR BODY.
- STEP #3  
1. MOUNT SOURCE HOLDER TO THE BRACKETS.
- STEP #4  
1. ATTACH SHIPPING COVER TO THE BACK SIDE OF SOURCE HOLDER AS SHOWN.

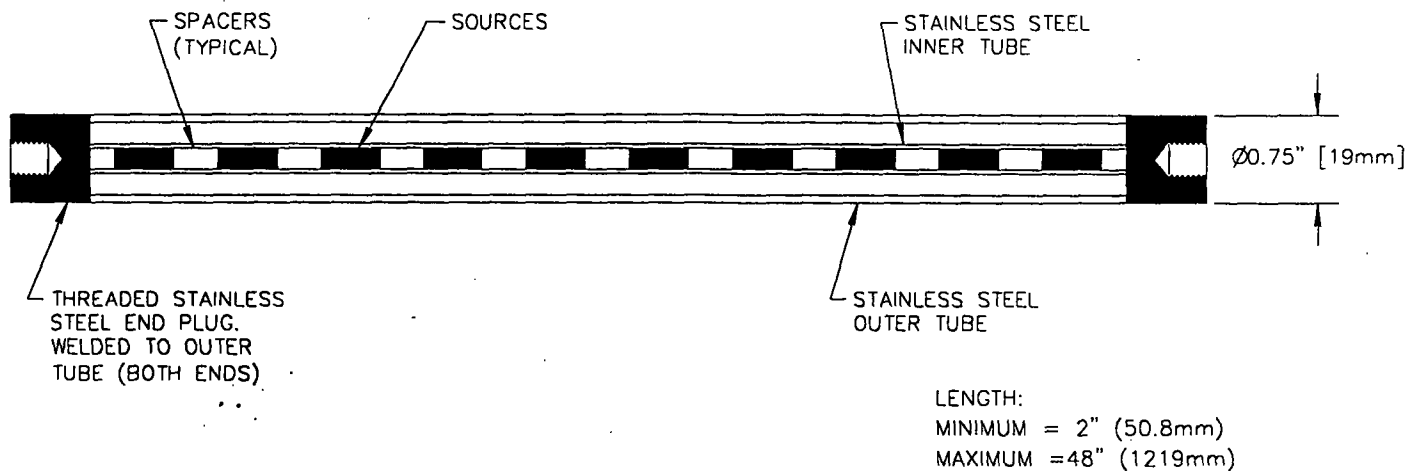
INSTALLATION COMPLETE.

TO REMOVE SOURCE HOLDER, REVERSE PROCEDURE.

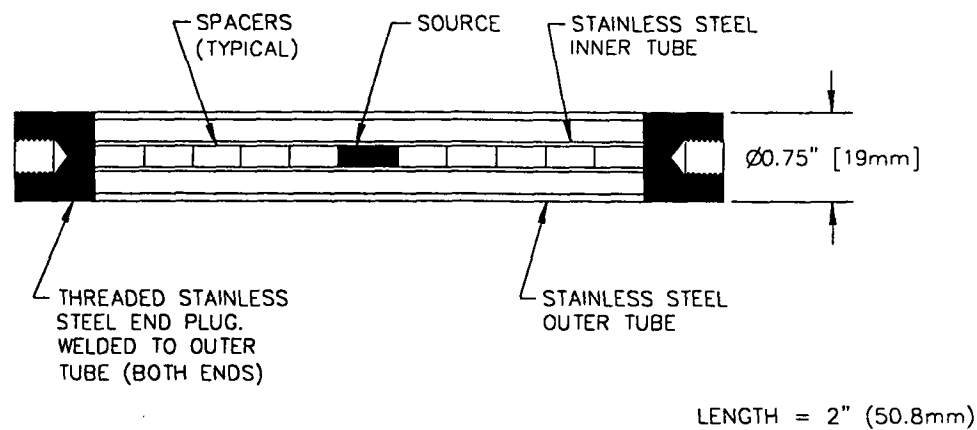
**WARNING:**  
IF SOURCE HOLDER IS REMOVED FROM THE VESSEL (PIPE) FOR ANY REASON, MAKE SURE THE SHIPPING COVER IS REATTACHED TO THE SOURCE HOLDER SO IT COVERS THE RADIATION PORT.



<b>ROVAN</b> MEASUREMENTS DIVISION			
CLIENT	SCALE	DR. BY RMC	
	NTS	DATE BY	
TITLE: INSTALLATION: MOUNTING RLL-1 SOURCE HOLDER ONTO VESSEL (PIPE)			
NOI	ISSUE NUMBER	REV.	
11/16/98	D-16070-K	3	



MODEL RLL-1 SOURCEHOLDER



MODEL RLL-1 SOURCEHOLDER