



University Radiation Safety Office

Dennis Lawyer  
Health Physicist  
License Assistance Team  
U.S. Nuclear Regulatory Commission Region I  
2100 Renaissance Boulevard, Suite 100  
King of Prussia, Pa 19406-2713

REC RG 1 09 24 15 PM 07 08

September 21, 2015

*9 days*  
NRC License No. 47-05872-02  
Docket No. 03001142

Dear Mr. Lawyer:

Enclosed are the 2 original documents signed by the President of Marshall University mentioned in my e-mail of September 15, 2015. Yes, the test data submitted earlier is sufficient.

I have not received the documentation that the shipment of sealed sources has been received. I'll send you that information as soon as it arrives. I have included copies of NRC Form 540 showing they were picked up.

William D. McCumbee, Ph.D.  
Radiation Safety Officer  
Marshall University  
University Radiation Safety Office  
BBSC 301J  
One John Marshall Drive  
Huntington, WV 25755  
Telephone: (304) 696-7366  
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Estimated burden per response to comply with this information collection request: 45 minutes. This uniform manifest is required by NRC to meet reporting requirements of Federal and State Agencies for the safe transportation and disposal of low-level waste. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-S F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0164), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

NRC FORM 540 (8-2010)		U.S. NUCLEAR REGULATORY COMMISSION UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER		5. SHIPPER - NAME AND FACILITY ESI @ Marshall University 1705 Third Avenue Huntington, WV 25755		SHIPMENT ID NUMBER 0454-091115TX		7. FORM 540 AND 540A FORM 541 AND 541A FORM 542 AND 542A ADDITIONAL INFORMATION		PAGE 1 OF 1 PAGE(S) 1 PAGE(S) 1 PAGE(S) NONE PAGE(S)		8. MANIFEST NUMBER (Use this number on all continuation pages) 0454-091115TX					
1. EMERGENCY TELEPHONE NUMBER (Include Area Code) 855-347-8197		USER PERMIT NUMBER T-MD004-L15		SHIPMENT NUMBER 0454-091115TX		GENERATOR TYPE (Specify)		9. CONSIGNEE - Name and Facility Address Toxco Material Management Center Operated By Toxco Material Management Center 109 Flint Road Oak Ridge, TN 37830		CONTACT Rick Low		TELEPHONE NUMBER (Include Area Code) (865) 482-5532					
ORGANIZATION 3E Company		CONTACT William McCumbee		TELEPHONE NUMBER (Include Area Code) (304) 696-7366		SIGNATURE - Authorized consignee acknowledging waste receipt		DATE		10. CERTIFICATION This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and in proper condition for transportation and disposal in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulation.							
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> 1		6. CARRIER - Name and Address Ecology Services, Inc. 9135 Guilford Road, Suite 200 Columbia, MD 21046		Truck #: Trailer #:		EPA I.D. NUMBER MDR000524712		SHIPPING DATE 09/11/2015		DATE					
4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? If "Yes", provide Manifest Number =====>		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		EPA MANIFEST NUMBER N/A		CONTACT Greg Keck		TELEPHONE NUMBER (Include Area Code) 301-362-6700		DATE 9/11/15		AUTHORIZED SIGNATURE <i>[Signature]</i>					
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)		12. DOT LABEL "RADIOACTIVE"		13. TRANSPORT INDEX		14. PHYSICAL AND CHEMICAL FORM		15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBq mCi		17. LSA/SCO CLASS		18. TOTAL WEIGHT OR VOLUME (Use appropriate units)		19. IDENTIFICATION NUMBER OF PACKAGE	
UN2915, RADIOACTIVE MATERIAL, TYPE A PACKAGE, 7 DAW-COMPACT 1 - 10 GAL DRUM 5 GAL DRUM <i>M</i>		WI		N.A.		SOLID/METAL OXIDES		AM-241 ; H-3		1.1914E+04 (3.2200E+02)		NA		0.64 <del>1.00</del> m <sup>3</sup> 20.00000 lb		MU-15-2 (15-001302)	
FOR CONSIGNEE USE ONLY				20. Generator Certification Statement A) Radioactive Materials. Certification is hereby made that this shipment of low-level radioactive waste has been prepared in accordance with a radioactive waste management program which has been approved by the Nuclear Regulatory Commission or an Agreement State regulatory agency and with the current revision of the site Material Acceptance Criteria. B) Hazardous Materials. Generator hereby certifies that this material does (or) <input checked="" type="checkbox"/> does not contain a hazardous waste as defined in 40 CFR 261. C) Data. Generator hereby represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and site Radioactive Material Licenses. D) INFECTIOUS SUBSTANCE: Generator hereby certifies that this material does not contain an infectious substance as defined in 49CFR 173.134  WILLIAM D. McCUMBEE <i>William D. McCumbee</i> 9-11-2015 Print Name Signature Date													

NRC FORM 541 (8-2010)		U.S. NUCLEAR REGULATORY COMMISSION			1. MANIFEST TOTALS							2. MANIFEST NUMBER				
UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST CONTAINER AND WASTE DESCRIPTION					NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams)				TOTAL	SOURCE			
								U-233	U-235	Pu	TOTAL					
Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste					1	m <sup>3</sup> 0.03398 ft <sup>3</sup> 1.20000	kg 7.71103 lb 17.00000	NP	NP	NP	NP	NP	NP			
					ACTIVITY (MBq/mCi) (LLD UNITS IN uCi/cc)					ALL NUCLEIDES			TRITIUM	C-14	Tc-99	I-129
					MBq	1.1914E+04	1.1840E+04	NP	NP	NP	NP	NP	NP			
					mCi	3.2200E+02	3.2000E+02	NP	NP	NP	NP	NP	NP			
DISPOSAL CONTAINER DESCRIPTION					WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER										16. WASTE CLASSIFI- CATION AS - Class A Stable AU - Class A Unstable B - Class B C - Class C	
5. CONTAINER IDENTIFICATION NUMBER/ TRANSPORT PERMIT NUMBER	6. CONTAINER DESCRIPTION (See Note 1)	7. VOLUME m <sup>3</sup> ft <sup>3</sup>	8. WASTE AND CONTAINER WEIGHT kg lb	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm <sup>2</sup> dpm/100 cm <sup>2</sup>		11. PHYSICAL DESCRIPTION			12. CHEMICAL DESCRIPTION	15. RADIOLOGICAL DESCRIPTION					
					ALPHA		BETA- GAMMA		11. WASTE DESCRIPTOR (See Note 2)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER m <sup>3</sup> ft <sup>3</sup>	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT		
# - Innerpack Container													RADIONUCLIDES	MBq	mCi	
15-001302 (MU-15-2)	4	0.02 0.65	9.07180 20.00000	< 0.005 < 0.5	< 0.00003674 < 220	< 0.00003674 < 2200	39	0.03398 1.20000	100	SOLID METAL OXIDES / NP	NP	AM-241 H-3	7.4003E+01 1.1840E+04	2.0001E+00 3.2000E+02		
Origin: WV Marshall University 1705 Third Avenue Huntington, WV 25755													Sub Total	1.1914E+04	3.2200E+02	
Package Total														1.1914E+04	3.2200E+02	
Shipment Total														1.1914E+04	3.2200E+02	

**NOTE 1: Container Description Codes.** For containers/waste requiring disposal in approved structural overpacks, the numerical code must be followed by "OP."

1. Wooden Box or Crate	9. Demineralizer
2. Metal Box	10. Gas Cylinder
3. Plastic Drum or Pail	11. Bulk, Unpackaged Waste
4. Metal Drum or Pail	12. Unpackaged Components
5. Metal Tank or Liner	13. High Integrity Container
6. Concrete Tank or Liner	19. Other. Describe in item 6, or additional page
7. Polyethylene Tank or Liner	
8. Fiberglass Tank or Liner	

**NOTE 2: Waste Descriptor Codes.** (Choose up to three which predominate by volume.)

20. Charcoal	29. Demolition Rubble	38. Evaporator Bottoms/Sludges/ Concentrates
21. Incinerator Ash	30. Cation Ion-exchange Media	39. Compressible Trash
22. Soil	31. Anion Ion-exchange Media	40. Noncompressible Trash
23. Gas	32. Mixed Bed Ion-exchange Media	41. Animal Carcass
24. Oil	33. Contaminated Equipment	42. Biological Material (except animal carcass)
25. Aqueous Liquid	34. Organic Liquid (except oil)	43. Activated Material
26. Filter Media	35. Glassware or Labware	59. Other. Describe in item 11, or additional page
27. Mechanical Filter	36. Sealed Source/Device	
28. EPA or State Hazardous	37. Paint or Plating	

**NOTE 3: Sorption, Solidification and Stabilization Media Codes.** (Choose up to three which predominate by volume). For media meeting disposal site structural stability requirements, the numerical code must be followed by "S". For all solidification media, the vendor and brand name must also be identified in item 13. Code 100=None Required

Sorption			Solidification		
60. Speedl Dri	64. Safe T Sorb	69. Chemsil 30	74. Petrosel	80. Cement	94. Vinyl Ester Styrene
61. Cation	65. Safe N Dri	70. Chemsil 50	75. Petrosel II	91. Concrete	99. Other. Describe in item 13, or additional page
62. Floor Dry	66. Florco	71. Chemsil 3030	78. Aquaset	(encapsulation)	100. None Required
63. Hi Dri	67. Florco X	72. Dicapril HP 200	77. Aquaset II	92. Bitumen	
	68. Solid A Sorb	73. Dicapril HP500	89. Other. Describe in item 13 or additional page.	93. Vinyl Chloride	

NRC FORM 540 (8-2010)		U.S. NUCLEAR REGULATORY COMMISSION		5. SHIPPER - NAME AND FACILITY		SHIPMENT ID NUMBER		7. FORM 540 AND 540A PAGE 1 OF 1 PAGE(S)		8. MANIFEST NUMBER							
UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER		ESI @ Marshall University 1705 Third Avenue Huntington, WV 25755		0454-091115ALA		X COLLECTOR		FORM 541 AND 541A 1 PAGE(S) FORM 542 AND 542A 1 PAGE(S) ADDITIONAL INFORMATION NONE PAGE(S)		(Use this number on all continuation pages) 0454-091115ALA							
1. EMERGENCY TELEPHONE NUMBER (Include Area Code) 855-347-8197		USER PERMIT NUMBER T-MD004-L15		SHIPMENT NUMBER 0454-091115ALA		GENERATOR TYPE (Specify)		9. CONSIGNEE - Name and Facility Address Alaron Nuclear Services Operated By Alaron Nuclear Services 2138 State Route 18 Wampum, PA 16157		CONTACT Mike Ollowski TELEPHONE NUMBER (Include Area Code) (724) 535-5777							
ORGANIZATION 3E Company		CONTACT William McCumbee		TELEPHONE NUMBER (Include Area Code) (304) 696-7366		SIGNATURE - Authorized consignee acknowledging waste receipt		DATE		10. CERTIFICATION							
2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? [ ] YES [X] NO		3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> 1		6. CARRIER - Name and Address Ecology Services, Inc. 9135 Guilford Road, Suite 200 Columbia, MD 21046		Truck #: Trailer #:		EPA LD. NUMBER MDR000524712		This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and in proper condition for transportation and disposal in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulation							
4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? If "Yes", provide Manifest Number =====>		EPA MANIFEST NUMBER N/A		CONTACT Greg Keck		TELEPHONE NUMBER (Include Area Code) 301-362-6700		SHIPPING DATE 09/11/2015		DATE							
11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)		12. DOT LABEL "RADIOACTIVE"		13. TRANSPORT INDEX		14. PHYSICAL AND CHEMICAL FORM		15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBq mCi		17. LSA/SCO CLASS		18. TOTAL WEIGHT OR VOLUME (Use appropriate units)		19. IDENTIFICATION NUMBER OF PACKAGE	
UN2915, RADIOACTIVE MATERIAL, TYPE A PACKAGE, 7 SEALED SOURCES 1 - 30 GAL DRUM - 10 GAL DRUM		YII		0.5 1.7		SOLID/METAL OXIDES		CS-137 ; RA-226		4.8840E+03 (1.3200E+02)		NA		1.36 <del>1.10</del> R <sup>3</sup> 100.00000 lb		MU-15-1 (15-001303)	
FOR CONSIGNEE USE ONLY				20. Generator Certification Statement													
				<p>A) Radioactive Materials. Certification is hereby made that this shipment of low-level radioactive waste has been prepared in accordance with a radioactive waste management program which has been approved by the Nuclear Regulatory Commission or an Agreement State regulatory agency and with the current revision of the site Material Acceptance Criteria.</p> <p>B) Hazardous Materials. Generator hereby certifies that this material does (or) <input checked="" type="checkbox"/> does not contain a hazardous waste as defined in 40 CFR 261.</p> <p>C) Data. Generator hereby represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and site Radioactive Material Licenses.</p> <p>D) INFECTIOUS SUBSTANCE: Generator hereby certifies that this material does not contain an infectious substance as defined in 49CFR 173.134</p> <p><u>WILLIAM D. McCUMBEE</u> <u>William D. McCumbee</u> <u>9-11-2015</u> Print Name Signature Date</p>													

Estimated burden per response to comply with this information collection request: 3.3 hours. This uniform manifest is required by NRC to meet reporting requirements of Federal and State Agencies for the safe transportation and disposal of low-level waste. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202, (3150-0166), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

NRC FORM 541 (8-2010)		U.S. NUCLEAR REGULATORY COMMISSION				1. MANIFEST TOTALS								2. MANIFEST NUMBER		
UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST						NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams)				0454-091115ALA	
							m <sup>3</sup>	0.11610	kg	40.82310	U-233	U-235	Pu	TOTAL	3. PAGE 1 OF 1 PAGE(S)	
						ft <sup>3</sup>	4.10000	lb	90.00000	NP	NP	NP	NP	4. SHIPPER NAME		
CONTAINER AND WASTE DESCRIPTION						ACTIVITY (MBq/mCi) (LLD UNITS IN uCi/cc)								SHIPMENT ID NUMBER		
						ALL NUCLIDES		TRITIUM	C-14	Tc-99	I-129	SOURCE		0454-091115ALA		
						MBq	4.8840E+03	NP	NP	NP	NP	NP	NP			
mCi	1.3200E+02	NP	NP	NP	NP	NP	NP									
5. DISPOSAL CONTAINER DESCRIPTION						16. WASTE CLASSIFICATION										
5. CONTAINER IDENTIFICATION NUMBER/ TRANSPORT PERMIT NUMBER	6. CONTAINER DESCRIPTION (See Note 1)	7. VOLUME m <sup>3</sup> /ft <sup>3</sup>	8. WASTE AND CONTAINER WEIGHT kg/lb	9. SURFACE RADIATION LEVEL mSv/hr/mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm <sup>2</sup> /dpm/100 cm <sup>2</sup>		11. PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. CLASSIFICATION AS - Class A Stable AU - Class A Unstable B - Class B C - Class C	
					ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER m <sup>3</sup> /ft <sup>3</sup>	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT				
# - Innerpack Container																
15-001303 (MU-15-1)	4 <i>MH</i>	0.04 0.11610	45.35900	0.5	< 0.00003674	< 0.00003674	36	0.11610	100	SOLID METAL OXIDES / NP	NP	CS-137	4.6990E+03	1.2700E+02		
Origin: WV Marshall University 1705 Third Avenue Huntington, WV 25755		1.36 4.10000	100.00000	50	< 220	< 2200		4.10000				RA-226	1.8500E+02	5.0000E+00		
Package Total												Sub Total	4.8840E+03	1.3200E+02		
Shipment Total	<i>PM</i>	0.04 0.11610	45.35900										4.8840E+03	1.3200E+02		
		1.36 4.10000	100.00000													

**NOTE 1: Container Description Codes.** For containers/waste requiring disposal in approved structural overpacks, the numerical code must be followed by "OP."

1. Wooden Box or Crate	9. Demineralizer
2. Metal Box	10. Gas Cylinder
3. Plastic Drum or Pail	11. Bulk, Unpacked Waste
4. Metal Drum or Pail	12. Unpackaged Components
5. Metal Tank or Liner	13. High Integrity Container
6. Concrete Tank or Liner	19. Other. Describe in item 8, or additional page
7. Polyethylene Tank or Liner	
8. Fiberglass Tank or Liner	

**NOTE 2: Waste Descriptor Codes.** (Choose up to three which predominate by volume.)

20. Charcoal	29. Demolition Rubble	38. Evaporator Bottoms/Sludges/Concentrates
21. Incinerator Ash	30. Carbon Ion-exchange Media	39. Compatible Trash
22. Soil	31. Anion Ion-exchange Media	40. Noncompatible Trash
23. Gas	32. Mixed Bed Ion-exchange Media	41. Animal Carcass
24. Oil	33. Contaminated Equipment	42. Biological Material (except animal carcass)
25. Aqueous Liquid	34. Organic Liquid (except oil)	43. Activated Material
26. Filter Media	35. Glassware or Labware	44. Sealed Source/Device
27. Mechanical Filter	36. Sealed Source/Device	45. Other. Describe in item 11, or additional page
28. EPA or State Hazardous	37. Paint or Plating	

**NOTE 3: Sorption, Solidification and Stabilization Media Codes.** (Choose up to three which predominate by volume). For media meeting disposal site structural stability requirements, the numerical code must be followed by "S". For all solidification media, the vendor and brand name must also be identified in item 13. Code 100=None Required

Sorption			Solidification		
60. Speed Dry	64. Safe T Sorb	69. Chemasil 30	74. Patrosel	80. Cement	94. Vinyl Ester Styrene
61. Celalox	65. Safe N Dry	70. Chemasil 50	75. Patrosel II	91. Concrete	99. Other. Describe in item 13, or additional page
62. Floor Dry	66. Florco	71. Chemasil 3030	76. Aquaset II	(encapsulation)	100. None Required
63. Hi Dry	67. Florco X	72. Dicaperl HP 200	77. Aquaset II	92. Bitumen	
	68. Solid A Sorb	73. Dicaperl HP500	89. Other. Describe in item 13 or additional page.	93. Vinyl Chloride	