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30 October 2013

U.S. Nuclear Regulatory Commission, Region III
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4351

LICENSE No: 24-21362-01

ATTN: Kevin Null

SUBJECT: Request for License Amendment

Gentlemen:

American Radiolabeled Chemicals, Inc (ARC) is pleased to present the attached information in support of a request for license amendment

This information is in four parts.

1. Proposed changes to SOPs 29 and 41 dealing with SCO storage and inventory.
2. Proposed changes to SOP 34 dealing with previously discussed site soil sampling..
3. Changes to the ARC RPP caused by 1. Above.
4. Re-transmission of the third party report on building 300 stack velocity. This report was previously transmitted during the government shut down and may have been misplaced.

If you have any questions or require clarification on any of the information stated above, you may contact our RSO at 314-991-4545.

Sincerely

AMERICAN RADIOLABELED CHEMICALS, INC

A handwritten signature in black ink, appearing to read 'Surendra K Gupta', is written over a horizontal line.

Surendra K Gupta, PhD
President.

RECEIVED OCT 31 2013

The attached documents show:

1. the proposed changes to SOPs 29 and 41 to fix the SCO and Building 200 problem;
2. the proposed changes to SOP 34 requested by Region III;
3. Changes to the ARC Radiation program caused by 1 and 2 above.

Parts to be deleted are shown with strike through.

New parts are shown in Red

AMERICAN RADIOLABELED CHEMICALS, INC.
STANDARD OPERATING PROCEDURE - SOP-29

Supersedes: 8/28/13
Approved by RSC: 10/29/2013
Approved by NRC:

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SUBJECT: STORAGE OF SURFACE CONTAMINATED OBJECTS

OBJECTIVE: To ensure proper storage of surface contaminated objects (SCO) that are not in use

RESPONSIBILITY: Radiation Safety Officer

REFERENCES: SOPs 16, 21, 33, 35, and 38

PROGRAM

1.0 Description

- 1.1. Surface contaminated objects (SCO) are pieces of equipment or objects that have become contaminated on their surfaces by use in restricted areas. When no longer being used, these items are transferred to building 200 for temporary storage. A decision is made by the Senior Chemist and the RSO on the future usefulness of the item prior to movement of the item. The possibilities are (1) reused sometime in the future (2) discarded as non radioactive waste (3) discarded as radioactive waste. . If a decision is reached that the item will not be reused and will be discarded as radioactive waste or decontaminated and released as non-radioactive waste, then it should be stored in building 200. If an item will be reused sometime in the future, it may be stored in a location determined by the employee who will reuse it.

2.0 Definitions

- 2.1. Surface Contaminated Objects (SCO); An object with radioactive material on the surface(s) that is no longer in use in the laboratories. These objects should be stored until they can be disposed of as radioactive waste or decontaminated and disposed of in the cold trash.
- 2.2. Intermittent use objects - Objects which are used intermittently are not required to be added to this inventory until they cease to be used in the laboratories.
- 2.3. Future use objects – Objects, contaminated or potentially contaminated, which have been obtained from other licensees and are intended for future use in ARC laboratories. These objects may be stored in low traffic areas of the Restricted Area until placed in use.

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- 2.4. Out of Service (OOS) waiting repair or calibration – These objects are kept in the Restricted Area until repair, repair by a third party or listed for disposal.

3.0 Placing SCO in storage

- 3.1. Move the object/equipment to building 200 (~~roll-up door area~~). Exercise caution so that contamination does not spread from the object.
- 3.2. Depending upon the decisions made concerning the usefulness of the item
- ~~3.2.1. For possible future use – Place the item in a location determined by the employee who will reuse it, safely with other equipment being held for future use. As this equipment will be used in the future, take care not to damage or degrade the item.~~
- 3.2.1 For future decon and disposal – Place the item with other equipment being held for decon and disposal in Building 200.
- 3.2.2. For disposal as radioactive waste – place the item in the SeaLand container for shipment as Rad Waste. If the SeaLand is full or out for disposal, place the store the item in building 200 until the SeaLand is available.

4.0 Removing SCO from storage

- 4.1. If an item is to be removed from storage for disposal as non-radioactive waste, it must be surveyed and pass the release level of 1000 dpm/100 cm²total.
- Survey prior to release must be done by a member of the Rad Safety organization
- 4.1.1. Scan the item with a GM survey meter and outline any areas where activity is detected.
- 4.1.2. Wipe test the marked areas. Decon and rewipe until the areas are below the release level. Take a few random wipes at other locations.
- 4.2. If an item removed from storage cannot be cleaned satisfactorily, then dispose as radioactive waste.

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- 4.3. Mark storage areas within building 200 with magenta and yellow rope with appropriate signage

5.0 Annual audits

The RSO, or designee, shall perform annual audits to assure the timely disposition of items placed in storage.

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SUBJECT: Inventory of Surface Contaminated Objects (SCO)

OBJECTIVE: This procedure provides a means to assure that the activity on Surface Contaminated Objects (SCO) is captured for the ARC nuclide inventory.

RESPONSIBILITY: Radiation Safety Officer (or designee, see RPP Section 3.3.4.12).

REFERENCES: a) General Reference Only: NUREG-1556, Vol 12, Program Specific Guidance About Possession Licenses for Manufacturing and Distribution, Appendix N

This reference is used for guidance only and not for any specific quantity or use.

b) General Reference Only: NUREG-1556, Vol 12, Program Specific Guidance About Possession Licenses for Manufacturing and Distribution, Appendix P

c) ARC Radiation Protection Program, Section 9

d) SOP

8 – Radioactive Waste Processing
16 – Contamination Control Program
29 – Storage of SCO
33 – Use of PCE
38 – Laboratory Personnel Training
39 – Spills and Other Emergencies

PROGRAM

1.0 Equipment

1.1 Spill Kits are maintained in each Laboratory. See SOP 39 for the contents of a typical Spill Kit. (Brand names, number of each item and so forth may change without a revision of this procedure.)

1.2 Instruction Signs – Instruction on what to do in case of a spill or other radiological emergency are posted on each wall of each laboratory building. See SOP 39 for a Typical Sign (Names and/or Telephone Numbers may change without a revision of this procedure)

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SUBJECT: Inventory of Surface Contaminated Objects (SCO)

1.3 Properly calibrated survey instruments.

2.0 Definitions

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- 2.2 Intermittent use objects - Objects which are used intermittently are not required to be added to this inventory until they cease to be used in the laboratories.
- 2.3 Future use objects – Objects, contaminated or potentially contaminated, which have been obtained from other licensees and are intended for future use in ARC laboratories. These objects may be stored in low traffic areas of the Restricted Area until placed in use.
- 2.4 Out of Service (OOS) waiting repair or calibration – These objects are kept in the Restricted Area until repair, repair by a third party or listed for disposal.

3.0 Requirement

Letter from USNRC Region III to ARC, transmitting License renewal, dated 30 Sep 2010

4.0 Prerequisites

- 4.1 Individuals performing activities controlled by this SOP have been trained in accordance with SOP – 38
- 4.2 Appropriate SCO have been appropriately stored in the waste processing facility located in Building 200.
- 4.3 Protective Clothing and Equipment is available in accordance with SOP – 33.

5.0 Procedure

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SUBJECT: Inventory of Surface Contaminated Objects (SCO)

NOTE: The analysis and labeling should take place prior to transport of the SCO to the processing facility, but may take place at the facility.

- 5.1 Measure, or estimate, the surface area of the object in square centimeters.
- 5.2 Determine the surface activity of the object by taking the following measurements
 - 5.2.1 Measure, by direct scan, the ~~total~~ highest C-14 activity in counts per minute (cpm)
 - 5.2.2 Convert the cpm per probe area to disintegrations per minute (dpm) per square centimeter by ~~multiplying by 0.72~~ dividing by the probe area, 17.4 sq cm, and by the efficiency of the survey instrument.
 - 5.2.3 Based upon historical contamination data, multiply the C14 dpm by five (5) to get the H3 dpm. ~~Measure, by dry wipe, the activity on 100 sq cm of surface.~~
 - 5.2.4 If an object has internal parts. In order to account for the internal surface area, multiply the outer surface area by three (3) to find the total surface area of the object. ~~Count the wipe using any Liquid Scintillation Counter (LSC) protocol that delivers H-3 dpm. The LSC automatically makes corrections for quench, overlap, efficiency and background to yield results in net dpm/100 cm².~~
 - 5.2.5 Convert the dpm per 100 sq cm to dpm per sq cm by dividing by 100.

NOTE: The calculations given in this procedure are listed for the rare case where the calculations must be done manually. The Inventory spreadsheet (Attachment A) performs all the required calculations

- ~~5.3 Repeat 4.2 above for each square meter of surface area as a minimum.~~
- ~~5.3 Using the highest H-3 and C-14 values found in 4.3 above, Multiply these results by the total square centimeters determined in 4.1 above. This result is the total C-14 and H-3 activity for the SCO. Convert to millicuries by dividing the respective dpm value by 2.22×10^9 .~~

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SUBJECT: Inventory of Surface Contaminated Objects (SCO)

5.4 Label the SCO with the results found ~~in 4.4~~ above.

5.4.1 the next sequential inventory number

5.4.2 ~~the area, in sq cm, of the SCO~~ The highest direct scan value.

5.4.3 ~~the total Tritium activity~~

5.4.4 ~~the total C-14 activity~~

5.5 Enter the data ~~from 4.4~~ in the SCO Inventory spreadsheet (Attachment A)

5.6 At the time the SCO is decontaminated and released OR the SCO is shipped as RAD Waste delete the entire entry for that object number from the spreadsheet.

6.0 Use

6.1 The inventory Spreadsheet shall be used to ensure that the ARC possession limit of 12,000 Curies of Tritium and 400 Curies of C-14 is not exceeded.

6.2 The ~~liquid waste~~ inventory spreadsheet shall be used to update the total possession inventory (kept in SBT) on a ~~monthly~~ quarterly basis.

6.3 It is expected that the total inventory of SCO contamination activity will be a very small fraction of the ARC possession limit.

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SUBJECT: Inventory of Surface Contaminated Objects (SCO)

Attachment

A

TYPICAL

Electronics - SCO Inventory

Total of all pages

Probe Face (sq cm)		17.4		Total H3 (mCi)		This page		Overall		1.53E+03		Total of all pages		
1µCi = DPM		2.22E+06		Total C14 (mCi)		7.51E+01		3.05E+02		Total DPM		Total µCi		
Item Number	CPM	C14 Eff.	DPM	L (in.)	W (in.)	H (in.)	S.A.	+Internal S.A.	Total S.A. (sq cm)	C14	H3	C14	H3	Description
E1	20,000	0.07	285714.3				800	1800	11612.88	190687684.7	953438423.6	8.59E+01	4.29E+02	
E2	4,000	0.07	57142.86				700	2100	13548.36	44493793.1	222468885.5	2.00E+01	1.00E+02	
E3	2,000	0.07	28571.43				300	900	5808.44	9534384.236	47671921.18	4.29E+00	2.15E+01	
E4	52,000	0.07	742857.1				700	2100	13548.36	578419310.3	2892098552	2.61E+02	1.30E+03	
E5	5,000	0.07	71428.57				600	1800	11612.88	47671921.18	238359605.9	2.15E+01	1.07E+02	
E6	10,000	0.07	142857.1				950	2850	18387.06	150961083.7	754805418.7	6.80E+01	3.40E+02	
E7	4,000	0.07	57142.86				1100	3300	21290.28	69918817.73	349594088.7	3.15E+01	1.57E+02	
E8	45,000	0.07	642857.1				55000	165000	1064514	39329334975	1.96647E+11	1.77E+04	8.86E+04	
E9	260,000	0.07	3714286				800	2400	15483.84	3305253202	16526266010	1.49E+03	7.44E+03	
E10	180,000	0.07	2571429				800	2400	15483.84	2288252217	11441261084	1.03E+03	5.15E+03	
E11	65,000	0.07	928571.4	18	8	14	928	2784	17961.2544	958523428.6	4792617143	4.32E+02	2.16E+03	
E12	80,000	0.07	1142857	15	7	13	782	2346	15135.4536	994118463.1	4970592315	4.48E+02	2.24E+03	
E13	15,000	0.07	214285.7	5	13	16	706	2118	13664.4888	168281881.8	841409408.9	7.58E+01	3.79E+02	using in lab now - kajal
E14	95,000	0.07	1357143	6	12	18	792	2376	15329.0016	1195611783	5978058916	5.39E+02	2.69E+03	
E15	85,000	0.07	928571.4	6	12	18	792	2376	15329.0016	818050167.5	4090250837	3.88E+02	1.84E+03	
E16	70,000	0.07	1000000	19	4	13	750	2250	14516.1	834258620.7	4171293103	3.76E+02	1.88E+03	
E17	80,000	0.07	857142.9	7	9	9	414	1242	8012.8872	394723507.4	1973617537	1.78E+02	8.89E+02	
E18	180,000	0.07	2285714	9	7	13	542	1626	10490.3016	1378036335	6890181675	6.21E+02	3.10E+03	
C1	35,000	0.07	500000	8	14	15	884	2652	17109.8432	491856413.8	2458282069	2.21E+02	1.11E+03	
E19	40,000	0.07	571428.6	13	5	20	850	2550	16451.58	540281773.4	2701408867	2.43E+02	1.22E+03	
E20	45,000	0.07	642857.1	20	8	12	992	2976	19199.9616	709358187.2	3546790936	3.20E+02	1.60E+03	
E21	8,000	0.07	114285.7	13	21	8	1090	3270	21096.732	138566384.2	692831921.2	6.24E+01	3.12E+02	
E22	60,000	0.07	857142.9	20	6	9	708	2124	13703.1984	675034403.9	3375172020	3.04E+02	1.52E+03	
E23	45,000	0.07	642857.1	22	11	9	1078	3234	20864.4744	770854965.5	3854274828	3.47E+02	1.74E+03	
E24	30,000	0.07	428571.4	20	9	11	998	2994	19316.0904	475765773.4	2378828867	2.14E+02	1.07E+03	
E25	15,000	0.07	214285.7	5	5	12	290	870	5612.892	69124285.71	345821428.6	3.11E+01	1.56E+02	
E26	80,000	0.07	1142857	22	10	12	1208	3624	23380.5984	1535671488	7678357438	6.92E+02	3.46E+03	
E27	160,000	0.07	2285714	21	5	15	990	2970	19161.252	2517077438	12585387192	1.13E+03	5.67E+03	
E28	175,000	0.07	2500000	21	7	11	910	2730	17612.868	2530584483	12652922414	1.14E+03	5.70E+03	
E29	13,000	0.07	185714.3	21	7	11	910	2730	17612.868	187986275.9	939931379.3	8.47E+01	4.23E+02	
E30	35,000	0.07	500000	20	6	4	448	1344	8670.9504	249165241.4	1245826207	1.12E+02	5.61E+02	
E31	45,000	0.07	642857.1	12	15	5	830	1890	12193.524	450499655.2	2252498276	2.03E+02	1.01E+03	Printer, panasonic KX-P1180
E32	65,000	0.07	928571.4	14	6	10	568	1704	10993.5264	586882443.3	2933412217	2.64E+02	1.32E+03	LKB Bromma 2150 HPLC pump
E33	140,000	0.07	2000000	17	4	13	682	2046	13199.8736	1517238345	7586191724	6.83E+02	3.42E+03	Panasonic KX-P 2123
E34	68,000	0.07	971428.6	17	4	13	682	2046	13199.8736	736944338.9	3684721695	3.32E+02	1.68E+03	Panasonic KX-P 2123
E35	38,000	0.07	542857.1	8	9	4	280	840	5419.344	169076413.8	845382069	7.82E+01	3.81E+02	VWR hot plate
E36	34,000	0.07	485714.3	12	7	4	320	960	6193.536	172890167.5	864450837.4	7.79E+01	3.89E+02	Knauer HPLC K-500
E37	28,000	0.07	400000	14	10	6	568	1704	10993.5264	252724744.8	1263623724	1.14E+02	5.69E+02	LKB 2140 rapid spectral detector
E38	44,000	0.07	628571.4	9	10	5	370	1110	7161.276	268699625.6	1293498128	1.17E+02	5.83E+02	knauer HPLC pump 64
E39	180,000	0.07	2571429	14	15	5	710	2130	13741.908	2030823842	10154119212	9.15E+02	4.57E+03	peckard bell model PB VX88
E40	69,000	0.07	985714.3	10	13	7	582	1746	11264.4936	638136336.9	3190681685	2.87E+02	1.44E+03	Beckman 112 solvent delivery module
E41	84,000	0.07	914285.7	13	9	9	630	1890	12193.524	640710620.7	3203553103	2.89E+02	1.44E+03	ANSPEC - spectroflow 757 absorbance detector
E42	88,000	0.07	1257143	14	10	5	520	1580	10064.496	727155704.4	3635778522	3.28E+02	1.64E+03	Knauer variable wavelength monitor
E43	61,000	0.07	871428.6	14	7	6	448	1344	8670.9504	434259420.7	2171297103	1.96E+02	9.78E+02	Totco Hallikainen tube block heater 100C
E44	24,000	0.07	342857.1	10	5	4	220	660	4258.056	83902581.28	419512906.4	3.78E+01	1.89E+02	waters associates differential refractometer R401
E45	166,000	0.07	2371429	14	12	6	648	1944	12541.9104	1709324406	8546622030	7.70E+02	3.85E+03	Fischer Ozon generator 500M
E46	122,000	0.07	1742857	9	13	9	630	1890	12193.524	1221354621	6106773103	5.50E+02	2.75E+03	Applied biosystems 783 prog. Absorbance detector
E47	84,000	0.07	1200000	9	13	9	630	1890	12193.524	840932689.7	4204663448	3.79E+02	1.89E+03	spectroflow 757 absorbance detector
E48	46,000	0.07	657142.9	15	15	10	1050	3150	20322.54	767517931	3837589655	3.46E+02	1.73E+03	fischer scientific isotemp 1016S
E49	53,000	0.07	757142.9	17	8	5	522	1568	10103.2056	439630457.1	2198152286	1.98E+02	9.90E+02	Epson stylus color 740
E50	144,000	0.07	2057143	11	16	3	514	1542	9948.3672	1176161639	5880808197	5.30E+02	2.65E+03	Beckman analog interface module 406
E51	84,000	0.07	1200000	14	6	10	568	1704	10993.5264	758174234.5	3790871172	3.42E+02	1.71E+03	Pharmacia LKB HPLC pump 2248
E52	47,000	0.07	671428.6	14	6	10	568	1704	10993.5264	424216536	2121082680	1.91E+02	9.55E+02	Pharmacia LKB HPLC pump 2248
E53	68,000	0.07	971428.6	10	15	5	550	1650	10645.14	594309950.7	2971549754	2.68E+02	1.34E+03	acuflo series IV pump

AMERICAN RADIOLABELED CHEMICALS, INC.
STANDARD OPERATING PROCEDURE - SOP-34

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SUBJECT: Surface Soil Sampling for Site Characterization

- OBJECTIVE:** To determine the radioactive status and amount of accumulated radioactivity on the ARC site.
- RESPONSIBILITY:** Radiation Safety Officer
- PREREQUISITES:** The ARC License has been amended to permit site characterization
A sample plan has been prepared using VSP
The sample plan has been approved by the NRC
- REQUIRED EQUIPMENT:** Scale map of the site showing location of sample points.
Measuring tape at least 100' in length.
Suitable tools for digging to a six inch depth
Container for sorting and mixing soil sample
Sample containers capable of holding at least 50 gm of soil

PROGRAM

1.0 Purpose

- 1.1 To determine the radioactive status and amount of accumulated radioactivity on the ARC site.
- 1.2 To provide sufficient information to propose the time and type of any remediation which may be required.

2.0 Procedure

- 2.1 Location
 - 2.1.1 Transfer the sample location from the VSP print out to the scale site plan.
 - 2.1.2 Using the scale site plan and a 100' steel tape, locate the first sample point of the survey unit "on the ground".
 - 2.1.3 Mark the sample point with a flag or landscaper paint.
 - 2.1.4 Repeat for the remaining points of the survey unit.
 - 2.1.5 Repeat for each additional survey unit.

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SUBJECT: Surface Soil Sampling for Site Characterization

2.2 Sampling

- 2.2.1 If necessary, loosen the soil at the sample point with a trowel or other digging implement.
- 2.2.2 Using the sampler rig to obtain a sample of the first 6 inches of soil.
- 2.2.3 Place the soil in a "clean" bucket. Remove all rocks, stones, twigs etc and discard. Stir the soil to remove any lumps. Repeat as necessary until the required sample size is obtained

(NOTE: Teledyne Brown, the analyst for ARC, requires a minimum of 50 grams. If the NRC is splitting sample, ORISE, the analyst for NRC requires 1 kilogram.)

- 2.2.4 Place the sample in an appropriate container, see note above. Label appropriately.
- 2.2.5 Clean the sampling tools of all visible dirt wash if necessary.
- 2.2.6 Clean the mixing bucket
- 2.2.7 Record the sample details on the chain of custody form.
- 2.2.8 Seal the sample container.
- 2.2.9 Repeat for each Sample point in the survey unit.
- 2.2.10 Package all the samples from this sample unit, with the chain of custody form for this sample unit in one box for shipment to the analytic lab.
- 2.2.11 Repeat 2.1 through 2.10 above for each additional survey unit

3.0 **Disposition of Results**

- 3.1 ~~Transmit a copy of~~ The raw results data is maintained on file ~~to the Decommissioning Branch Region III, NRC~~ for examination by inspectors.
- 3.2 The Decommissioning Branch, Region III, USNRC shall be informed if any sample exceeds ten (10) times the screening value.

4.0 **Remediation**

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SUBJECT: Surface Soil Sampling for Site Characterization

- 4.1 Any proposed remedial actions must be submitted to the Decommissioning Branch Region III, NRC prior to taking any action.

5.0 Confirmatory Sampling

- 5.1 Site characterization sampling will be repeated at three-year intervals.
- 5.2 Results of sampling will be ~~submitted to the Decommissioning Branch~~ maintained for examination by Region III, NRC
- 5.3 Sampling may be discontinued if two successive results show no increase in soil contamination.

AMERICAN RADIOLABELED CHEMICALS
RADIATION PROTECTION PROGRAM

By: Regis A. Greenwood, CHP
Radiation Safety Officer
And
Donald Lite III
Health Physicist
1 October 2013

Reviewed by Radiation Safety Committee
Accepted by NRC
29 October 2013

Accepted by NRC

American Radiolabeled Chemicals
101 ARC Drive
St. Louis, MO 63146

ARC RADIATION PROTECTION PROGRAM

- (d) Shall, must - these words denote a requirement
- (e) Should, may - these words are used to denote a recommendation or permission
- (f) Committee - the ARC Radiation Safety Committee
- (g) Commission - The Nuclear Regulatory Commission or its representatives
- (h) Finding - the discovery of an item of non-compliance with any applicable NRC or other Federal, State and local regulations or the conditions and provisions, including those incorporated by reference, of the ARC license.
- (i) Observation - an observation is not an item of noncompliance but is a suggestion that may improve the quality of the radiation protection program.
- (j) Authorized User - An Authorized User (AU) is a person whose training and experience have been reviewed and approved by NRC, who is named on the license, and who uses or directly supervises the use of, licensed material.
- (k) Unfinished Form - An item is in finished form when it has been packaged for shipping and all applicable DOT labels have been affixed, that is, the item is ready for presentation to the carrier. Prior to this state, the radionuclide is in unfinished form.
- (l) Surface Contaminated Objects (SCO); An object with radioactive material on the surface(s) that is no longer in use in the laboratories. These objects should be stored until they can be disposed of as radioactive waste or decontaminated and disposed of in the cold trash.
- (m) Intermittent use objects - Objects which are used intermittently are not required to be added to this inventory until they cease to be used in the laboratories.
- (n) Future use objects - Objects, contaminated or potentially contaminated, which have been obtained from other licensees and are intended for future use in ARC laboratories. These objects may be stored in low traffic areas of the Restricted Area until placed in use.
- (o) Out of Service (OOS) waiting repair or calibration - These objects are kept in the Restricted Area until repair, repair by a third party or listed for disposal.

The attached documents are a re-transmission of the formal report of the third party evaluation of thee Building 300 sstack flow.

The originals were submitted during the government shut down and may have been misplaced.



Duct Systems, Inc.

October 10, 2013

ARC
101 ARC Drive
St. Louis, Missouri 63146

Regarding: Exhaust Fan Performance Report

Please find attached the Exhaust Fan Performance Report

Should you have any additional questions, comments, or concerns, please do not hesitate to contact me.

Thank you,

DUCT SYSTEMS, INC.

Robert A. Willig

Robert A. Willig
Project Manager

FAN TEST REPORT

PROJECT: ARC

SYSTEM: Building 300 Stack

UNIT DATA				
Location		West Side of Building		
Service		300 Building		
Manufacturer		Greenheck		
Model Number		VK-CD-24-1-111		
Serial Number		12734453 1203		
FAN DATA		Design	Actual	
Total Supply CFM		N/A	N/A	
Exhaust CFM		12,000	12,633	
Outside Air CFM		N/A	N/A	
Fan R.P.M.		N/A	2281	
Total S.P. (Inch W.C.)		5"	6.5"	
Discharge S.P. (Inch W.C.)			3.7"	
Inlet S.P. (Inches W.C.)			2.8"	
Filter P.D. (Inches W.C.)			N/A	
MOTOR DATA		Design	Nameplate	Actual
Manufacturer			Baldor	
Horsepower / B.H.P.		25	25	20.2
R.P.M.		1770	1770	1789
Volts		460	230/460	472
Phase		3	3	
Amps			60/30	26.8
Service Factor			1.15	
Frame			284T	
DRIVE DATA				
Belt: Part No. and Qty.		Bx53 (x4)		
Motor Sheave		9"x 1 7/8"		
Fan Sheave		7" x 1 15/16"		
Distance and Motor Travel		15 + - 1"		

Comments:

Readings Taken By: Eric Turnbeaugh

Test Date: 10/2/2013

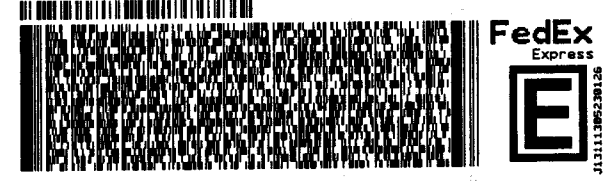
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AMERICAN RADIOLABELED CHEMICALS
101 ARC DRIVE
ST. LOUIS, MO 63146
UNITED STATES US
SHIP DATE: 30OCT13
ACTWGT: 1.0 LB MAN
CAD: 0747982/CAFE2704
BILL SENDER
TO KEVIN NULL
U.S. NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE IL 605324351
RECEIVED OCT 31 2013
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