

May 8, 2019

Created by Pamela A Powell 

## **Site ALARA Committee Meeting Minutes**

The Site ALARA Committee and Change Control Board in 735-B Alternate EOC.

Rollcall was performed and Quorum was met for the SAC and CCB. (See Attached)

### **1) Introduction: Kent Williams**

Kent welcomed everyone to the meeting.

### **2) Environmental ALARA : Teresa Eddy**

Teresa Eddy presented the Environmental overview and Guides Status. (See Attached)  
Discussion was held about the H Area airborne guide being 22.9% of guide. This was determined to be due to sporadic I-29 level increase. The cause is being investigated. No guides have been exceeded. There was also a discussion about the 291-F stack exceeding the rolling 12-month derived concentration standard of 1. An exceedance investigation is ongoing. Even with this level the perimeter level is not likely to be exceeded.  
Martha Thompson discussed the problems with the Air Effluent Chain of custody.

### **3) Review of 1st Quarter Performance and Review of 2018: Pamela Powell**

1st Quarter PI were reviewed (See Attached)

### **4) Review of +/- 25% Discrepancy: Facility Representatives**

(Note: All doses are in rem)

SRNL -	Target 4.5	vs	Actual 2.947 (-34.351%)
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No facility representative from SRNL was present at the meeting.

HBL	Target 0.24	vs	Actual 0.346 (44.17%)
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Johnny Lott stated that there has been an increase in number of tour groups trying to identify suitable missions for the facility. Also new operators in the facility. No request to change goals at this time.

HCA	Target 2.875	vs	Actual 1.97 -31.48%)
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Johnny Lott stated that due to the efficiency of processing, doses have not been high as expected. No request to change goals at this time.

FCA/235	Target .425	vs	Actual 2.316 (+444.94%)
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Terry Pifer stated that Bagout activities in East Maintenance continued from 4<sup>th</sup> quarter of 2018. Increase work schedule with two entries per day has increased the dose for the 1<sup>st</sup> quarter. Requested to increase annual goal from 1.7 to 6.0. Request approved per the board.

Tritium	Target 0.775	vs	Actual 0.496 (-36.00%)
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Ruby Parks stated that Maintenance activities that were scheduled for 1<sup>st</sup> quarter have been pushed out to 4<sup>th</sup> quarter. No request to change goals at this time.

INF	Target 1.4	vs	Actual 0.974 (--30.43%)
-----	------------	----	-------------------------

Terry Pifer stated that not as many badges were issued in 1<sup>st</sup> quarter. External dosimetry have stopped issuing badges to personnel. No request to change goals at this time.

LWO	Target 16.215	vs	Actual 20.413 (+25.89%)
-----	---------------	----	-------------------------

Doug Bumgardner stated that Tk Farms were completing a lot of outage work and WT had a lot of equipment failures that had to be repaired. No request to change goals at this time.

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# SITE ALARA COMMITTEE & CHANGE CONTROL BOARD

## ATTENDANCE ROSTER

Meeting Date: 5/7/2019Quarter/Year: 1/2019

	<u>Chair</u> <b>Dennis Carr</b> <b>Doug Bumgardner (Vice Chair)</b>		<u>Alternate</u> <b>Wyatt Clark</b> <b>Jim Wilson</b>
 _____ _____  _____ _____   _____  	<u>SAC Voting Member</u>  <b>Kent Williams (Ex. Secretary)</b> <b>Richard Sprague (ESH&amp;Q)</b> <b>Deborah Solomon (SRTE)</b> <b>Verne Mooneyhan (SWM/TRU)</b> <b>Steve Wilkerson (NMD)</b> <b>Janice Lawson (NMSP)</b> <b>Donald Barfield (SRNL)</b> <b>Doug Bumgardner (TF)</b> <b>Joel Cantrell (WT)</b> <b>William Harris</b> <b>Jim Wilson (LWO RPD)</b> <b>Tim West (EC&amp;ACP)</b>	_____ _____  _____ _____ _____ _____ _____ _____  _____	<u>Alternate</u>  <b>Roy Windham</b> <b>Mary Flora</b> <b>Ruby Parks</b> <b>Robert Minnick</b> <b>Richard Burns</b> <b>Durwood Melvin</b> <b>Scott Craft</b>  <b>Cindy Head</b>

**Quorum Requirements: SAC = Chair/Vice Chair + 7 other members\* = 8 total**

**\*Member may be represented by designated alternate. At least 2 members from each company are required for an official vote.**

**CCB = Chair/Vice Chair\* + 5 other members = 6 Total May be represented by designated alternate.**

Quorum Met SAC: Yes No

Quorum Met CCB: Yes No

**SITE ALARA COMMITTEE  
&  
CHANGE CONTROL BOARD**

**ATTENDANCE ROSTER**

**Other Meeting Attendees (print name)**

Terry Pifer	Martha Thompson
Dan Skiff SRR 8-1064	Teresa Eddy
Carl Herten	Jason Walker
William D.	Rick Sprague
Dennis Furbek	Bill G. D. W.
Dennis Hadlock	
JACK PARKER	

# 1st Quarter Site ALARA Committee Meeting

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**Kent Williams**

**Radiological Protection Director**

**Savannah River Nuclear Solutions, LLC**  
**05/08/2019**

**1st Quarter Review**

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**735-B EOC**

# AGENDA

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- |                                       |               |
|---------------------------------------|---------------|
| 1. Introduction                       | Kent Williams |
| 2. Environmental ALARA                | Teresa Eddy   |
| 3. 1st Quarter Performance Indicators | Pamela Powell |
| 1. 2018 Recap                         |               |
| 4. $\pm$ 25% Discrepancy              | Facility Reps |



# 2019 Environmental ALARA Overview and Guides Status

**Teresa Eddy**

Savannah River Nuclear Solutions, LLC  
March 8, 2019

Site ALARA Committee

# Environmental ALARA Liquid Status for February 2019

Area	YTD TED (mrem)	ALARA Guide (mrem/yr)	YTD % of Guide
A-Area	2.19E-06	6.00E-05	3.7%
F-Area	1.20E-04	5.20E-04	23.1%
F-Tk Farm	0.00E+00	1.00E-03	0.0%
H-Area	1.13E-05	1.04E-03	1.1%
H-ETP	6.16E-05	7.25E-03	0.9%
H-Tk Farm	2.57E-04	8.65E-03	3.0%
K-Area	0.00E+00	8.55E-06	0.0%
L-Area	0.00E+00	7.08E-05	0.0%
S-Area	8.22E-07	1.50E-04	0.5%
Tritium	4.23E-06	3.00E-04	1.4%
<b>Site Totals</b>	<b>4.57E-04</b>	<b>1.90E-02</b>	<b>2.4%</b>

# Environmental ALARA Airborne Status for February 2019

Area	YTD TED (mrem)	ALARA Guide (mrem/yr)	YTD % of Guide
A-Area	0.00E+00	1.25E-04	0.0%
C-Area	2.32E-05	2.31E-04	10.0%
F-Area	9.74E-06	1.87E-03	0.5%
H-Area	4.30E-04	1.88E-03	22.9%
H-ETP	0.00E+00	1.00E-07	0.0%
H-Tk Farm	1.50E-10	1.00E-06	0.0%
K-Area	2.63E-04	2.05E-03	12.8%
L-Area	2.92E-04	1.95E-03	15%
S-Area	1.00E-07	5.00E-05	0.2%
Tritium	3.75E-03	8.95E-02	4.2%
Z-Area	2.25E-09	5.00E-06	0.0%
<b>Site Totals</b>	<b>4.76E-03</b>	<b>9.77E-02</b>	<b>4.9%</b>

## February 2019 DCS Compliance Status

- No radiological effluent locations, other than the 291-F stack, exceeded the DOE Order 458.1 Derived Concentration Standards (DCS) requirement. The 291-F stack rolling 12-month DCS sum of fractions is 2.14, which is above the requirement of 1.00.
  - The actinides Pu-239, Am-241, U-238, and U-234 currently make up about 98% of the DCS sum of fractions; Pu-239 represents 88% of the sum of fractions.
  - An exceedance investigation is ongoing.
    - *Improvements have been made to the facility and corrective maintenance through this investigation process.*
    - *The facility evaluated the benefit of moving forward with a planned entry into the Canyon Exhaust Tunnel or the 2-fan configuration exercise through evaluation of the associated risk.*
- Facility briefed DOE EQMD on evaluation.



## Airborne Effluent Chains of Custody

- **Technical Bulletin was sent to RP in early December 2018 by Joey Smiley and was to be covered at toolbox meetings**
- **Topic of annual RP training (January-July 2019)**
- **Program Owner reviews in April 2019 indicate that there is still a lack of understanding.**
- **Key points:**
  - the sampler is always the first relinquisher
  - the date of the first custody transfer should be the same as the date the sample was collected
  - the sample must be in the RP technician's possession or in his/her direct view while in custody
  - RP accepts custody and verifies samples/documentation before relinquishing to lockbox or directly to Environmental Monitoring (EM) personnel who transport to EBL

## Airborne Effluent Chains of Custody

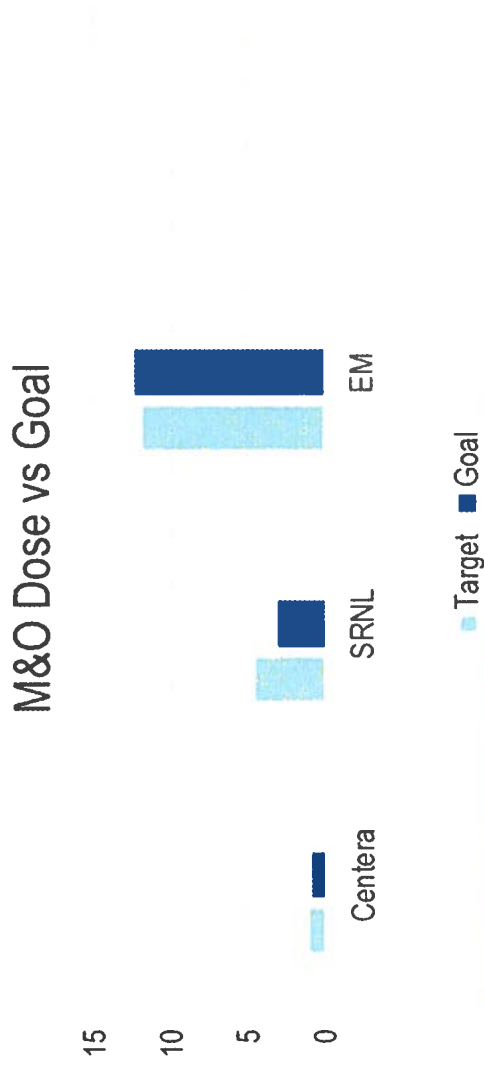
- The temporary location of the samples (right after sampling) in countroom should be locked and restricted to authorized personnel.
- Also, as a continuous improvement, will be contacting facilities about placing lockboxes (often in entry control facilities) outside of the countroom (where feasible). This is the temporary storage location that EM personnel will accept the samples from.
- Samples are typically accepted by EM personnel for transport to EBL on Monday mornings. Document reviews and samples should be ready.
- Beginning in July 2019, custody issues will be documented in STAR as errors.

# Example Airborne Effluent COC

## FIELD CHAIN OF CUSTODY for EM 2S18 HAO RAD AIR

<b>Savannah River Site</b> SGCP/GM Building 730-2B Aiken, SC 29808 GM Contact: Martha Thompson		<b>Date:</b> Sample ID: <b>RA1DAIR180000E1</b> Station ID: 292-H MAIN (291-H ISOKINETIC) Field QC Code: SDN: 1596 Matrix: AIRFLTR Comp. Start Date: 11-15-18 Comp. Stop Date: 11-22-18		<b>Time:</b> Contract: INTERNAL/ Sampling Event: EM 2S18 HAO RAD AIR SEIR Name: DEC EM 2S18 HAO RAD AIR							
<b>Laboratory Work Request Form</b> Lab ID: (1)											
Item	Preservative	pH/2	Qty	Container	Analysis Requested						
1	NONE		1	1 BAG PLASTIC	GROSS ALPHA/NONVOLATILE BETA (AIR) [203], STRONTIUM-90 (AIR) [203]						
(Cont.)					URANIUM (AIR) [211], NEPTUNIUM (AIR) [209], PLUTONIUM (AIR) [209]						
(Cont.)					GAMMA SPECTROSCOPY (AIR) [204], AMERICIUM/CURIUM (AIR) [207]						
<b>Comments (1)</b>  SAMPLER: SAMPLE VOLUME (CUBIC FEET): <u>26505</u> SAMPLER: STACK VOLUME (CUBIC FEET): <u>262454</u> SAMPLER: EXPLAIN ANY OFF-NORMAL SITUATION (E.G. ISOKINETIC FACTOR OUT OF ACCEPTABLE RANGE, DOWNTIME EXPERIENCED, ETC) LAB: 40-DAY TAT LAB: FOR GAMMA SPEC, ALWAYS REPORT K-40, CO-60, CS-137. REPORT OTHER GAMMA SPEC ANALYTES ONLY WHEN SIGNIFICANT											
<b>Cooler Information</b>											
Cooler number		Items in cooler		Cooler temp.							
<b>Custody Transfer Record</b>											
Relinquished By (3) (print/sign)	Company	Received By (print/sign)	Date	Time	Reason for Transfer (1)						
John Q. Sampler / <i>[Signature]</i>	SRNS	211-1814 Count room lock box	11-27-18	0900	sample collected						
211-1814 Count room	SRNS	James T. Radford / <i>[Signature]</i>	11-25-18	0900							
James T. Radford / <i>[Signature]</i>	SRNS	201-14 lock box	11-25-18	0930	awaiting pickup						
201-14 lock box	SRNS	James T. Radford / <i>[Signature]</i>	11-26-18	1130	pickup						
James T. Radford / <i>[Signature]</i>	SRNS	James H. Receipt / <i>[Signature]</i>	11-26-18	1600	lab receipt						
(1) optional (2) pH: Correct / Incorrect (3) First relinquisher is the sampler											

# M&O Dose vs Goal



Title	Target	Actual	Percent
Centerra	1.0	0.828	-17.2
SRNL	4.5	2.947	-34.5
EM	11.84	12.391	+4.65



# LWO Dose vs Goal

LWO Dose vs Goal



Title	March 2019
LWO Target	16.215
LWO YTD Dose	20.413
LWO Percent	+25.89

## Maximum Individual Dose

Title	YTD	QTR	Facility
EM	0.418	0.418	235
LWO	0.279	0.279	SSS
SRNL	0.057	0.057	
Centera	0.051	0.051	

# Maximum Extremity

Title	CY19
EM Maximum Extremity Dose	3.486 (235)
LWO Maximum Extremity Dose	3.694 (SSS)

# Radiological Events

Title	March 2019	Event
M&O ORPS PerCon	0	
M&O Non ORPS PerCon	0	
M&O ORPS Rad Mat	0	
M&O Non ORPS Rad Mat	0	
LWO ORPS PerCon	0	
LWO Non ORPS PerCon	0	
LWO ORPS Rad Mat	0	
LWO Non ORPS Rad Mat	0	

# Intakes

Title	CY19
M&O > 500 mrem	0
M&O > 100 mrem	0
LWO > 500 mrem	0
LWO > 100 mrem	0

# 2018 Recap

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- **M&O**
  - Target 69.775 Actual 66.211
  - ORPS Percon Events – 1
  - NonORPS Percon Events – 1
  - ORPS Radmat Events – 0
  - NonORPS Radmat Events – 0
  
- **LWO**
  - Target 63.7 Actual 69.114
  - ORPS Percon Events – 0
  - NonORPS Percon Events – 0
  - ORPS Radmat Events – 0
  - NonORPS Radmat Events – 0



## +/- 25% Discrepancy

Title	Target	Actual	Percent
SRNL	4.5	2.947	-34.51
HCA	2.875	1.97	-31.48
HBL	0.24	.346	+44.17
FCA/235	.425	2.316	+444.94
Tritium	.775	.496	-36.00
INF	1.4	.974	-30.43
LWO	16.215	20.413	+25.89

## **Savannah River Site**

**2019 ALARA Goals (U)**  
**Rev 1 – Approved 5/8/2019 per the**  
**CCB see meeting minutes**  
**SRNS-J6000-2019-00014**

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**M&O Senior Executive**

**Date**

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**SRR Senior Executive**

**Date**



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CY19 ALARA Goals

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**Executive Summary**

The ALARA goals for the Savannah River Site for calendar year 2019 were established by the appropriate radiological facilities and their support groups based on the anticipated work for the year.

The annual base routine operations cumulative exposure goal is 97.01 Rem. Exposure goals for special (non-recurring) work operations are maintained by calendar quarter. The preliminary special work goal for the year is 32.925 Rem. The total exposure goal for 2019 is 129.935 Rem. In comparison, the goal for 2018 was 133.475 Rem. The 2019 goal is a 6% decrease from the 2018 goal.

SRS has established an annual Administrative Control Level (ACL) of 500 mRem Total Effective Dose (TED) for most Site workers, the same as past few years. This can be compared to the DOE ACL of 2,000 mRem, and a federal limit of 5,000 mRem. Contractor chief official approval is necessary to allow a contractor employee to exceed the SRS ACL. DOE/National Nuclear Security Administration Secretarial Officer, or designee, approval is necessary to allow a Site worker to exceed the DOE ACL. DOE-SR has established the Site ACL for DOE employees at 150 mRem.

The goal for intakes of radioactive material resulting in an exposure greater than 500 mRem Committed Effective Dose (CED) from a single event continues to be zero.

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CY19 ALARA Goals

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**Radiological Performance Goals**

**Cumulative Radiation Exposure** is based on total effective dose exposures (including tritium) resulting from Base Routine Operations and Special Work Operations.

- *Base Routine Operations* are related to normal day to day activities.
- *Special Work Operations* are not part of routine operations and typically are of limited, non-repetitive duration. Special Work Operations goals are reviewed quarterly by the facilities and goals may be adjusted as approved by the company's executive committee.

**Maximum Individual Exposure/Administrative Control Levels** are established to maintain personnel radiation exposure well below the Department of Energy's Administrative Control Level of 2,000 mRem, while being both challenging and achievable for the site.

**Personnel Contamination Events** are established for skin and personnel effects contamination that are reportable in accordance with the criteria contained in DOE O 232.2A, "Occurrence Reporting and Processing of Operations Information." These reporting criteria are available in the site's SIRIM/ORPS information system.

**Confirmed Intakes Resulting in CED** are established for a single intake of radioactive material that exceeds the anticipated exposure of 500 mRem or greater. This criterion is based on DOE M 232.2A, "Occurrence Reporting and Processing of Operations Information." The reporting criterion is available in the site's SIRIM/ORPS information system.

## CY19 ALARA Goals

<b>Business Unit</b>	<b>Base Routine (Rem)</b>	<b>Special Work (Rem)</b>	<b>Total Cumulative Exposure Goal (Rem)</b>
<b>Management &amp; Operations Total</b>	<b>64.51</b>	<b>7.125</b>	<b>71.635</b>
<b><u>H-Area Material Disposition</u></b>			
HB-Line	0.56	0.30	0.86
H-Canyon/OF	9.70	1.80	11.50
<b><u>Nuclear Materials Storage Project</u></b>			
K-Area	8.8	4.00	12.8
L-Area	1.70	0.30	2.0
<b><u>Solid Waste</u></b>			
E-Area	3.6	0	3.6
<b><u>INF</u></b>	5.6	0	5.6
<b><u>EC&amp;ACP</u></b>			
SGWR, Facility Disposition, BAL	0.25	0	0.25
<b><u>Tritium Projects</u></b>			
TRI/TEF	2.50	0.225	2.725
<b><u>Laboratories</u></b>			
772-F/772-1F	7.80	0	7.80
<b><u>F-Area Operations</u></b>	6.00	0	6.00
<b>Savannah River National Laboratory</b>	<b>18.0</b>	<b>0.5</b>	<b>18.5</b>
<b>Centerra-SRS Total</b>	<b>4.0</b>	<b>0</b>	<b>4.0</b>
<b>Liquid Waste Operations Total</b>	<b>32.80</b>	<b>25.80</b>	<b>58.60</b>
<b><u>Waste Treatment</u></b>			
DWPF/Saltstone	14	6.30	20.30
<b><u>Tank Farms</u></b>			
H-Tank Farm/299-H/ETP/F-Tank Farm	18.80	19.50	38.30
<b>Site Goal</b>	<b>101.31</b>	<b>32.925</b>	<b>134.235</b>

SRS ADMINISTRATIVE CONTROL LEVEL – 500 mRem

DOE-SR ADMINISTRATIVE CONTROL LEVEL – 150 mRem (for DOE-SR employees)

# Radiation Exposure Worksheet

Proc. Ref. 5Q1.1-505

Facility/Work Group FCA	Manager Terry Pifer	Area F	ALARA Coordinator Tom Battey	Phone 2-3068	Date 5/6/2019				
<b>PART I (Enter Percentages % of Exposure, as applicable)</b>									
Activity	Estimated Total Exposure	Anticipated Schedule				Percent % of Work Group Exposure per Section	Percent % of Work Group Exposure per Total		Final Yearly Exposure
		Quarter 1	Quarter 2	Quarter 3	Quarter 4				
A. Base Routine Operations									
A.1 Operations/Rigging	4.800	0.250	3.600	0.700	0.250	80			A.1
A.2 RPD	1.100	0.150	0.550	0.250	0.150	18			A.2
A.3 Misc.	0.100	0.025	0.025	0.025	0.025	2			A.3
A.4									A.4
A.5									A.5
A.6									A.6
A.7									A.7
A.8									A.8
A.9									A.9
A.10									A.10
<b>A. Total</b>	6.000	0.425	4.175	0.975	0.425	100			
B. Special Work Operations									
B.1									B.1
B.2									B.2
B.3									B.3
B.4									B.4
B.5									B.5
B.6									B.6
B.7									B.7
B.8									B.8
B.9									B.9
B.10									B.10
B.11									B.11
B.12									B.12
<b>B. Total</b>									
<b>TOTALS</b>									
6.0 REM Base Rem		6.0 REM Total (Base + Special)		By exposure anticipated in the quarter the work is performed					REM Facility/Work Group Total
<b>Part II (List specific ALARA Actions to Reduce Exposures on above work/jobs. Reference to sections in Part I.)</b>									

Retention Period - 75 Years