

Site ALARA Committee Meeting – 3rd Quarter 2022

December 15, 2022

Introduction

The 3rd Quarter 2022 Site ALARA Committee Meeting was held via Microsoft Teams.

Kent Williams welcomed everyone to the meeting. The safety topic was being safe around the holidays. Kent discussed the climbing and the use of ladders this time of year and to be aware of your individual capabilities. He also stated that we may have some cold weather with the possibility of snow around Christmas Day in the CSRA. He discussed the importance of being safe when driving in snow and/or icy conditions and preparing your home, such as plumbing and pets, for the below freezing temperatures.

With no other comments relating to safety, Kent turned the meeting over to Diana Jennings to take a roll call. Roll call was performed, and a quorum was met for the Site ALARA Committee and the Change Control Board. See attached.

Environmental ALARA

See slides 3-5.

Kent turned the meeting over to Jared Wicker for the Environmental ALARA Update. Jared discussed the Liquid and Airborne Discharges as of September 2022. Jared explained for S-area the Airborne emissions ALARA guide was exceeded, however there was no violation of any DOE emission limits. An exceedance investigation was performed, and it was discovered that there was an increase in Cs 137 seen that was attributed to the sand filter being shut down for maintenance during the month of July.

JC Wallace asked the question if the DOE limit was not exceeded, then how close were we to that number? Jared stated that we are not able to evaluate whether the releases from the ALARA goal exceedance would have caused the site to be out of regulatory compliance with our site air permit for the year based off of the single event. The DOE dose limit to the public is 100 mrem/yr from all pathways. The year-to-date dose from S area is 4.36e-4 mrem. The year-to-date dose from all air effluent sources is 1.39e-2 mrem.

Kent asked the question will the facility be increasing their goals for next year? Jared answered that depending on the maintenance scheduled for next year, the facility will adjust the goals as needed.

Diana asked when will the 2023 Environmental ALARA Goals be ready, as they will need to be approved by the Site ALARA Committee. Eric Doman, Environmental ALARA Chairman, answered stating that their goals would be complete in early January to be presented for approval.

Q3 2022 Dosimeter High Exposures

See slides 6-10.

The meeting was then turned over to David Roberts, External Dosimetry Manager, to discuss the high dosimeter readings in Quarter 3.

J. C. Wallace had no questions but applauded External Dosimetry and Landauer for their great investigation work to find the problem, address it and create a solution.

3rd Quarter Performance Indicators

See slides 11-18.

Diana Jennings presented the 3rd Quarter Performance Indicators. See attached.

For the maximum individual dose, Kevin Webster asked if the value reported for BSRA was a part of the high dosimeter readings for Q3 2022. The answer was yes and that we report the information that is available from the dose report, however it was noted that the actual maximum dose was lower than what was reported. A later investigation determined that 154 mrem was the maximum individual dose for BSRA.

+/- 25%

See slide 19.

CLB- Terry Pifer stated that the deactivation work that was planned for 2022 has been pushed out to 1st and 2nd Quarter of 2023.

BSRA- Kevin Webster stated that the window work that was planned for this year is about 3 months behind and therefore is now expected to be done next year.

Centerra- Ethan Vanfossen stated that there were post changes and training that did not take place during 2022. Centerra has lowered their ALARA Goals for next year due to being well below the goal for this year.

2023 ALARA Goals

See slide 20.

Diana presented the 2023 ALARA Goals for approval. See attached.

Nick Miller inquired about the large percent increase for the year. Diana Jennings answered that the large percentage of increase was mostly due to the addition of Salt Waste Processing Facility (SWPF) and the goal of 21.02 Rem to Savannah River Mission Completion (SRMC).

A discussion was had between John Gall, Nick Miller, and J. C. Wallace on how ALARA Goals and doses are reported. A decision was made to consider all opinions and discuss on another date.

All ALARA goals were approved per the board.

2023 Administrative Control Levels (ACL)

See slide 21.

Kent reported the 2023 Administrative Control Levels.

Kent gave the floor to Lee Sims to discuss the request for qualified KAC KIS Glove Box (GB) Operators to be assigned an ACL of 800 mrem for CY 2023. Lee stated that there are currently 16 qualified KIS GB operators that have an ACL of 1000 mrem for CY 2022. The dose estimate for 2023 is 12.5 Rem, and with 16 operators the average is 781 mrem per person. They will reevaluate as they approach 75% of the ACL.

There were no comments and the administrative control levels were approved per the board.

There were no other comments and meeting was adjourned.



Site ALARA Committee Meeting

Kent Williams

Radiological Protection Director

December 15, 2022

Agenda

- | | |
|---------------------------------------|----------------|
| 1. Introduction | Kent Williams |
| 2. Environmental ALARA | Jared Wicker |
| 3. 3rd Quarter High Dosimeter Results | David Roberts |
| 4. 3rd Quarter Performance Indicators | Diana Jennings |
| 5. 2023 ALARA Goals | |



Environmental ALARA Update September 2022

Jared Wicker
Environmental Monitoring

2022 Environmental ALARA Guides Status- Liquid Discharges

Liquid Discharges
ALARA Guide Summary Report for All Areas
September 2022

Area	YTD TED (mrem)	Projected Annual TED (mrem/yr)	Alara Guide (mrem/yr)	YTD % of Guide	Projected % of Guide
A-Area	4.89E-06	6.52E-06	6.00E-05	8.1%	10.9%
F-Area	8.24E-05	1.10E-04	5.20E-04	15.8%	21.1%
F-Tk Farm	2.76E-04	3.68E-04	2.00E-03	13.8%	18.4%
G-Area	9.84E-05	1.31E-04	5.07E-02	0.2%	0.3%
H-Area	3.01E-03	4.01E-03	5.20E-03	57.9%	77.2%
H-ETP	3.31E-04	4.42E-04	1.00E-02	3.3%	4.4%
H-Tk Farm	1.21E-03	1.62E-03	8.65E-03	14.0%	18.7%
K-Area	4.31E-05	5.75E-05	2.80E-04	15.4%	20.5%
L-Area	0.00E+00	0.00E+00	7.08E-05	0.0%	0.0%
S-Area	2.09E-06	2.79E-06	1.65E-04	1.3%	1.7%
Tritium	1.06E-04	1.42E-04	2.71E-04	39.2%	52.2%
Site Totals:	5.17E-03	6.89E-03	7.79E-02	6.6%	8.8%

2022 Environmental ALARA Guides Status- Airborne Emissions

Airborne Emissions
ALARA Guide Summary Report for All Areas
September 2022

Area	YTD TED (mrem)	Projected Annual TED (mrem/yr)	Alara Guide (mrem/yr)	YTD % of Guide	Projected % of Guide
A-Area	3.18E-08	4.24E-08	1.70E-03	0.0%	0.0%
C-Area	6.29E-06	8.39E-06	2.50E-04	2.5%	3.4%
F-Area	7.83E-05	1.04E-04	1.29E-03	6.1%	8.1%
H-Area	1.36E-05	1.82E-05	4.96E-03	0.3%	0.4%
H-ETP	0.00E+00	0.00E+00	1.00E-07	0.0%	0.0%
H-Tk Frm	2.15E-09	2.87E-09	1.00E-06	0.2%	0.3%
J-Area	1.48E-09	1.97E-09	1.00E-06	0.1%	0.2%
K-Area	8.64E-05	1.15E-04	4.05E-03	2.1%	2.8%
L-Area	1.05E-04	1.40E-04	4.75E-03	2.2%	3.0%
S-Area	4.36E-04	5.81E-04	1.10E-04	396%	528.4%
Tritium	1.32E-02	1.76E-02	1.08E-01	12.2%	16.3%
Z-Area	1.11E-08	1.48E-08	5.00E-06	0.2%	0.3%
Site Totals:	1.39E-02	1.85E-02	1.25E-01	11.1%	14.8%

SAVANNAH RIVER NUCLEAR SOLUTIONS

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Q3 2022 Dosimeter High Exposures

David Roberts
Dosimetry Services Manager

Q3 2022 Dosimeter High Exposures

- High exposure notification received from Landauer on 10/20/2022 for dosimeter XA01838322J
 - Skin Dose = 246 mrem
 - Lens Dose = 246 mrem
 - Deep Dose = 246 mrem
 - Dosimeter assigned to Savannah River National Laboratory (SRNL) employee on 7/6/2022 and returned on 10/5/2022
 - Dosimeter shipped to Landauer for processing on 10/6/2022
- High exposure notification received from Landauer on 10/25/2022 for dosimeter XA01431511T
 - Skin Dose = 335 mrem
 - Lens Dose = 335 mrem
 - Deep Dose = 335 mrem
 - Dosimeter assigned to Soil & Groundwater Projects (SGP) employee on 7/5/2022 and returned on 10/1/2022
 - Dosimeter shipped to Landauer for processing on 10/4/2022

Q3 2022 Dosimeter High Exposures

- High exposure notification received from Landauer on 10/26/2022 for dosimeter XA008196369
 - Skin Dose = 533 mrem
 - Lens Dose = 533 mrem
 - Deep Dose = 533 mrem
 - Dosimeter issued in K-Area to Tritium employee on 9/6/2022 and returned on 9/21/2022.
 - Dosimeter shipped to Landauer for processing on 10/6/2022
 - Employee was a declared pregnant worker who was issued Fetal dosimeter XA009913580 on 9/6/2022 and returned dosimeter on 9/21/2022
 - Skin Dose = 0 mrem
 - Lens Dose = 0 mrem
 - Deep Dose = 0 mrem

Q3 2022 Dosimeter High Exposures

- Facility Radiological Protection Department Management for all affected employees were notified of high exposures 10/24 through 10/26, 2022
- External Dosimetry requested Landauer to reread all high dose dosimeters
 - Landauer reported on 10/28/2022 that dose values were substantiated
- After the evaluation it was concluded that employees' doses could not be attributed to occupational dose
- Doses were treated as contested doses per Manual 5Q 2.1 Procedure 110- Guidelines for Handling Contested Dosimetry Data
- Multiple meetings were held with Landauer to discuss high exposure results
- On 11/23/2022, Landauer informed Health Physics Services of the source of the elevated dosimeters- QC/calibration dosimetry from another customer had been incorrectly inserted into the SRS inventory
- External Dosimetry continued to work with Landauer and identified additional impacts
 - Two additional Q3 2022 assigned high dose dosimeters (total of 5 Q3 2022 dosimeters)
 - Five Q4 2022 assigned dosimeters
 - Nine dosimeters that were not assigned to personnel

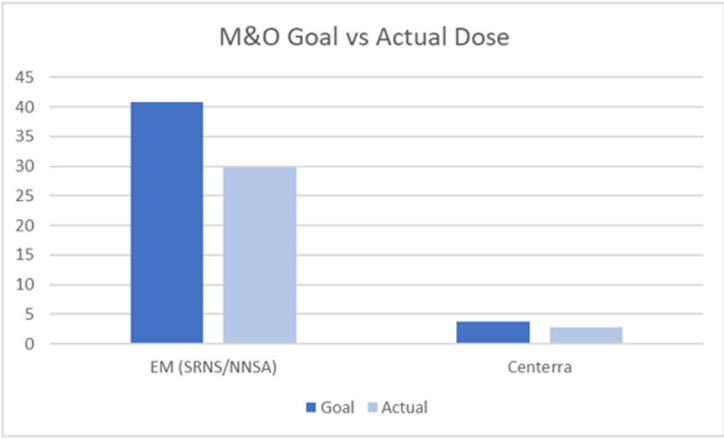
Landauer Dosimeter High Exposure Follow-up

- Landauer provided individual high dose explanation letters on 12/5/2022 for Q3 2022 dosimeters
- Q4 2022 Dosimeters
 - All assigned and unassigned dosimeters were returned to External Dosimetry
 - Intermediate reads performed
 - Dosimeters sent to Landauer for emergency read
 - Two Q4 2022 Area monitoring dosimeters were returned to External Dosimetry and intermediate reads were performed
- One Q1 2023 dosimeter was removed from inventory
- External dosimetry initiated Radiation Exposure Dose Investigations (REDI)
 - REDIs for Q3 2022 high dose dosimeters have been completed and notifications made
 - REDIs for Q4 2022 in process
- Dose validations were performed on all Calendar Year 2022 dosimeters that had dose results ≥ 100 mrem
- Landauer to provide SRS with a written Corrective Action Plan to prevent recurrence

3rd Quarter Performance Indicators

Diana Jennings
Site ALARA Coordinator

M&O Goal vs Actual Dose - 3rd Quarter



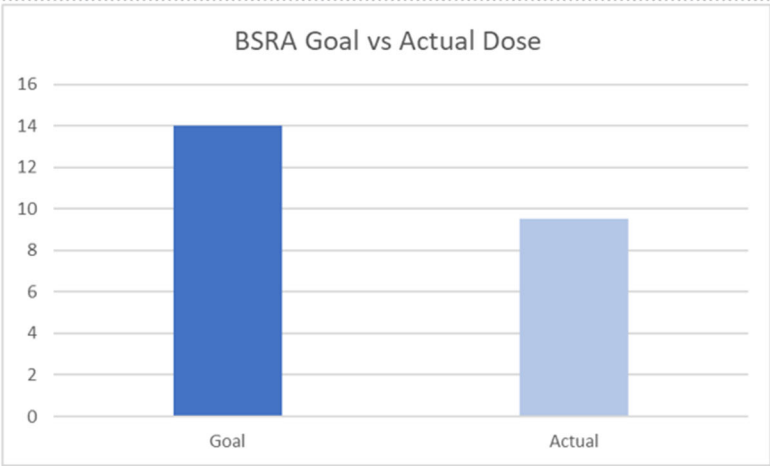
	Goal	Actual	Percent
EM (SRNS/NNSA)	40.785	29.797	-26.9%
Centerra	3.75	2.729	-27.2%

LWO Goal vs Actual Dose – 3rd Quarter



LWO Goal	51.04
LWO Actual Dose	48.105
Percent	-5.8%

BSRA Goal vs Actual Dose – 3rd Quarter



BSRA Goal	14
BSRA Actual Dose	9.501
Percent	-32.1%

Maximum Individual Dose

	YTD*	Facility
EM	.444	KAC
SRMC	.343	SWPF
BSRA	.246	
Centerra	.116	

*Rem

Maximum Extremity

	CY22*
EM Maximum Extremity Dose	9.310 (KAC)
SRMC Maximum Extremity Dose	3.499 (SSS)
BSRA Maximum Extremity Dose	1.714

*Rem YTD

Radiological Events

Title	QTR 3	Event
M&O ORPS PerCon	0	
M&O Non ORPS PerCon	0	
M&O ORPS Rad Mat	1	Contaminated liquid leaked out of stainless tank (U) (HCA)
M&O Non ORPS Rad Mat	1	RBOF Cask Pad, 080-13G
SRMC ORPS PerCon	0	
SRMC Non ORPS PerCon	0	
SRMC ORPS Rad Mat	0	
SRMC Non ORPS Rad Mat	0	
BSRA ORPS PerCon	0	
BSRA Non ORPS PerCon	0	
BSRA ORPS Rad Mat	0	
BSRA Non ORPS Rad Mat	0	

Intakes

Title	Quarter 3
M&O > 500 mrem	0
M&O > 100 mrem	0
SRMC > 500 mrem	0
SRMC > 100 mrem	0
BSRA > 500 mrem	0
BSRA > 100 mrem	0

+/- 25%

Facility	Target*	Actual*	Percent
CLB	3	1.314	-56.2%
BSRA	14	9.501	-32.1%
Centerra	3.75	2.729	-27.9%

2023 ALARA Goals

Facility	2022 ALARA Goal (Rem)	2023 ALARA Goal (Rem)	Difference
NMD	7.38	6.906	-6.4%
KAC	24.3	24.8	+2%
LLL	2.2	2.2	0%
F- Area (formerly CLB/FCA)	CLB-4 FCA-0.3	4.3	0%
INF/SGP	4	4	0%
SWM	4	3.6	-10%
Tritium	2.825	2.9	+2.7%
BSRA	18.5	18.5	0%
LWO Waste Treatment	21.52	26.7	+24.1%
LWO Tank Farms	43.2	47.535	+10%
LWO SWPF		21.02	
Centerra	5	4.5	-10%
Site Total	137.225	166.961	+21.7%

2023 Administrative Control Levels (ACL)

- **General SRS ACL recommendation of 500 mrem**
- **SRMC has established an ACL for SWPF of 1000 mrem**
- **KAC requests that all qualified KIS Glovebox operators are given an ACL of 800 mrem**
 - The estimated exposure for KIS processing for 2023 is 12.5 rem
 - With 16 currently qualified KIS Glove box (GB) operators, that equates to an average of exposure of 781 mrem/person/year

SITE ALARA COMMITTEE & CHANGE CONTROL BOARD

ATTENDANCE ROSTER

Meeting Date: 12/15/2022

Quarter/Year: 3rd 2022

<u>✓</u>	<u>Chair</u> JC Wallace Doug Bumgardner (Vice Chair)	<u>* ✓</u>	<u>Alternate</u> Janice Lawson Joel Cantrell
<u>✓</u>	<u>SAC Voting Member</u> Kent Williams (Ex. Secretary) Richard Sprague (ESH&Q) Deborah Solomon (SRTE) Verne Mooneyhan (SWM/TRU) Matt Arnold (NMD) Lee Sims (NMSP) Geoffrey Smoland (SRNL) Doug Bumgardner (WT) Lisa Amidon (TF) Elester Patten John Gall (LWO RPD) Tim West (EC&ACP)	<u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u> <u>✓</u>	<u>Alternate</u> Roy Windham Mary Flora Ruby Parks Robert Minnick Scott Craft Neil McIntosh Kevin Webster James Harris Carol Hunter

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)

<u>Oiana Jennings</u>	<u>Pamela Powell</u>
<u>Wendy Furtick</u>	<u>David Roberts</u>
<u>Terry Pifer</u>	<u>Ethan Vanfossen</u>
<u>* Nick Miller (for Janice Lawson)</u>	<u>Jared Wicker</u>
<u>Eric Doman</u>	
<u></u>	<u>+</u>
<u></u>	
<u></u>	
<u></u>	
<u></u>	
<u></u>	
<u>Other individuals attended</u>	
<u>the meeting, but it was adjourned</u>	
<u>before attendance list was created. -DLJ 12/16/2022</u>	