



Savannah River Site Watch

Savannah River Site Watch

For Immediate Release

January 17, 2019

Contact: Tom Clements, director, SRS Watch, tel. 803-834-3084, srswatch@gmail.com

Radioactive Hot Spot Caused by Rainwater Leak into Aging H-Canyon Reprocessing Plant at SRS, Causing Posting of “Contamination Area” on Floor; DOE Admits Previous Leaks but Unable to Stop Rainwater Intrusion that could Contaminate “Clean Parts of the Building” with Radioactive Material

As Problems Mount at H-Canyon: Can the Aging Facility be Operated Safely; Should it be Shuttered?

Columbia, SC – The U.S. Department of Energy has revealed that a nuclear contamination incident at the nation’s only operating spent fuel reprocessing plant was caused by chronic leaking of rainwater into the aging facility at the Savannah River Site in South Carolina.

In its stunning admission, DOE confirmed that rainwater leaked through an “expansion joint at a location where previous rain water intrusions had occurred,” picked up radioactive material and resulted in a radioactive hot spot on the floor of the H-Canyon reprocessing plant.

It is believed that this is the first time that DOE has admitted that the roof of the H-Canyon is degraded and has been leaking, according to Savannah River Site Watch. Though the path of the leaked water has not been fully explained by DOE, the leaking rainwater appeared to enter a contaminated part of the H-Canyon and then flowed into what DOE calls “clean parts” of the facility.

The H-Canyon is operated by contractor Savannah River Nuclear Solutions (SRNS) and reprocesses highly radioactive spent research reactor spent fuel. DOE has been dragging its feet in exploring non-reprocessing options for the spent fuel now stored in the L-Basin, such as dry cask storage, according to SRS Watch. A second reprocessing plant at SRS, the F-Canyon, has been closed for many years and awaits decontamination and decommissioning, which seems to have been postponed due to cost and lack of priority.

The leakage incident in the H-Canyon occurred on December 2, 2018 and was initially outlined in an “occurrence report” dated December 17, 2018. DOE stated that the “Radiological

Protection Department performed surveys of the area and found 80,000 disintegrations per minute beta-gamma contamination and no detectable alpha contamination.”

“It is shocking to learn that rainwater is leaking into the aging H-Canyon facility, yet another indication that the state of the facility is degraded and in need of significant, costly repair and upgrades or closure,” said Tom Clements, director of Savannah River Site Watch. “The rainwater leakage and radioactive contamination issue comes on the heels of a series of operational problems and on-going concern about the status of the H-Canyon radioactive air exhaust tunnel, all underscoring concern about the state of the facility and if merits continued operation,” added Clements. “Concern is growing about a significant radiation event at the H-Canyon, especially in case of an earthquake,” said Clements.

No worker exposure was reported from the leak or hot spot but DOE further stated in the report that “The area where the contamination was found was reposted as a Contamination Area. The rainwater was removed and additional surveys were performed throughout the facility to identify other rainwater intrusion points. The area will continue to be monitored for additional leaks. No other radiological contamination was identified.” To its credit, DOE identified the threat posed by the radioactive rainwater and marked the area off, according to SRS Watch.

In a January 16, 2019 “final” update, DOE revealed that the location of the current leak “has a history of previous rainwater intrusions.” DOE went on to reveal that “The expansion joints between the sections of the building also run vertically from the roof to the first floor. Over time, some of these joints have failed and rain water migrates into the facility. Efforts have been made to stop the migration of rain water, but in certain locations its [sic] continues. This migration of rain water could also cause contamination to migrate to the clean parts of the building.”

DOE concluded that “This report reinforces the importance of monitoring known locations where rain water intrusions have occurred to identify the in leakage so mitigation steps can be initiated.”

SRS Watch calls on DOE to reveal to the public the historical and current status of rainwater leakage into the H-Canyon reprocessing plant, if such leaks have caused spread of radioactive contamination and what is being done to “mitigate” or stop any leaks, including what repairs will be done to the roof. Likewise, pursuit of the dry cask storage option for spent fueled must be accelerated, according to SRS Watch.

###

Notes:

See below for text of “Occurrence Reports” of December 17, 2018 and January 16, 2019. See January 16, 2019 “final” update linked here:

<https://orpspublic.doe.gov/orps/reports/displayReport2.asp?crypt=%87%C3%95%9Ba%8Eujz%5D%92>

Aerial photos of H-Canyon, can be used with credit ©High Flyer – provided exclusively to SRS Watch:

http://www.srswatch.org/uploads/2/7/5/8/27584045/srs-h-canyon-july-30-2015-high-flyer_orig.jpg

http://www.srswatch.org/uploads/2/7/5/8/27584045/srs-h-canyon-june-20-2016-high-flyer_orig.jpg

“Savannah River Site’s H Canyon Turns 60 Years Old,” SRS news release of August 15, 2015:

<https://www.energy.gov/nrsa/articles/savannah-river-site-s-h-canyon-turns-60-years-old>

DNFSB Exhaust Tunnel report, released Dec. 7, 2018 - “H-Canyon Exhaust Tunnel Fragility Analysis Input and Assumptions”:

<https://www.dnfsb.gov/sites/default/files/document/16846/H-Canyon%20Exhaust%20Tunnel%20Fragility%20Analysis%20Input%20and%20Assumptions%20%5B2019-100-004%5D.pdf>

DNFSB weekly report on TSR violation at H-Canyon, November 30, 2018:

<https://www.dnfsb.gov/sites/default/files/document/16926/Savannah%20River%20Week%20Ending%20November%2030%202018.pdf>

10 Code of Federal Regulations 835 Appendix D (with contamination values mentioned in the DOE’s “occurrence report” on the H-Canyon leak):

<https://www.govinfo.gov/content/pkg/CFR-2011-title10-vol4/pdf/CFR-2011-title10-vol4-part835-appD.pdf>

10 CFR PART 835—OCCUPATIONAL RADIATION PROTECTION:

<https://www.govinfo.gov/content/pkg/CFR-2011-title10-vol4/pdf/CFR-2011-title10-vol4-part835.pdf>

Text of “occurrence reports” of December 17, 2018 and January 16, 2019:

December 17, 2018 “occurrence report” text:

FINAL

EM-SR--SRNS-HCAN-2018-0013

**Occurrence Report
After 2017 Redesign**

H-Canyon

(Name of Facility)

Reprocessing

(Facility Function)

Savannah River Site

Savannah River Nuclear Solutions

(Laboratory, Site, or Organization)

Name: Burns, R.

Telephone No.: (803) 208-8419

(Facility Manager/Designee)

Name: Abshire, Robert

Telephone No.: (803) 208-3026

(Originator/Transmitter)

Name: Abshire, R.

Date: 12/17/2018

(Authorized Classifier (AC))

1. Occurrence Report Number: EM-SR--SRNS-HCAN-2018-0013

Contamination Found on First Level of 221-H-Canyon (U)

2. Report Type and Date: FINAL

	Date	Time
Notification:	12/18/2018	10:09 (ETZ)
Initial Update:	12/18/2018	10:09 (ETZ)
Latest Update:	12/18/2018	10:09 (ETZ)
Final:	12/18/2018	10:09 (ETZ)

Report Level: L

4. Division or Project: SRNS/M&O/NMD/HMD

5. Secretarial Office: EM - Environmental Management

6. System, Bldg., or Equipment: 221-H Canyon

7. UCNI?: No

Reviewed for Public Release:

8. Plant Area: H-Area

9. Date and Time Discovered: 12/02/2018 12:15 (ETZ)

10. Date and Time Categorized: 12/03/2018 07:30 (ETZ)

11. DOE HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

12. Other Notifications:

Date	Time	Person Notified	Organization
12/03/2018	07:45 (ETZ)	D. Sanders	DFM
12/03/2018	08:06 (ETZ)	DNFSB	DNFSB
12/03/2018	08:00 (ETZ)	T. Kohler	FR
12/03/2018	07:50 (ETZ)	C. Borders	SRSOC
12/03/2018	08:01 (ETZ)	J. Lott	RCO FM
12/03/2018	08:05 (ETZ)	T. Tice	Eng Mgr
12/03/2018	07:30 (ETZ)	J. Bodkin	Ops Mgr

13. Subject or Title of Occurrence:

Contamination Found on First Level of 221-H-Canyon (U)

14. Reporting Criteria:

6B(3) - Identification of onsite radioactive contamination greater than 10 times and no greater than 100 times the total contamination values in 10 CFR Part 835, Appendix D, exclusive of footnote 3 to Appendix D, and that is found outside of the following locations: areas routinely posted, controlled, and monitored for contamination; areas controlled in accordance with 10 CFR Section 835.1102(c); and, per 10 CFR Section 835.604(a), any non-posted area that is under the continual observation and control of an individual knowledgeable of and empowered to implement required access and exposure control measures. For tritium, the reporting threshold is 10 times the removable contamination values in 10 CFR Part 835, Appendix D.

15. Description of Occurrence:

On Sunday, December 2, 2018, the 221-H Canyon RPD FLM reported rainwater intrusion at 221-H -Canyon 1st level, section 5/6 expansion joint at a location where previous rainwater intrusions had occurred. Radiological Protection Department (RPD) performed surveys of the area and found 80,000 d/p/m beta-gamma contamination and no detectable alpha contamination. This radiation contamination level is greater than 10 times but no greater than 100 times the total contamination values in 10 CFR 835 Appendix D.

16. Is Subcontractor Involved? No

19. Immediate Actions Taken and Results:

The area where the contamination was found was reposted as a Contamination Area. The rainwater was removed and additional surveys were performed throughout the facility to identify other rainwater intrusion points. The area will continue to be monitored for additional leaks. No other radiological contamination was identified.

This occurrence was categorized on 12/03/18 at 0730 hours, which is longer than two (2) hours from discovery on 12/02/18 at 1215 hours. The delay in categorization was due to management evaluation of the event.

20. ISM:

21. Cause Code(s):

22. Description of Cause:

25. Corrective Actions

Local Tracking System Name: STAR - Site Tracking, Analysis and Reporting

26. Lessons Learned:

27. Similar Occurrence Report Numbers:

30. HQ Keyword(s):

06B--Radiological - Facility/Equip/Site Contamination

11D--Other - Natural Phenomena

12M--EH Categories - Radiological Control (Other)

14L--Quality Assurance - No QA Deficiency

31. HQ Summary:

On December 2, 2018, the 221-H Canyon Radiological Protection Department First Line Manager reported rainwater intrusion at 221-H -Canyon first level, section 5/6 expansion joint at a location where previous rainwater intrusions had occurred. Radiological Protection Department performed surveys of the area and found 80,000 disintegrations per minute beta-gamma contamination and no detectable alpha contamination. This radiation contamination level is greater than 10 times but not greater than 100 times the total contamination values in 10 Code of Federal Regulations 835 Appendix D. The area where the contamination was found was reposted as a contamination area. The rainwater was removed, and additional surveys were performed throughout the facility to identify other rainwater intrusion points. The area will continue to be monitored for additional leaks. No other radiological contamination was identified.

January 16, 2019 "occurrence report" text:

EM-SR--SRNS-HCAN-2018-0013

FINAL

Occurrence Report

After 2017 Redesign

H-Canyon

(Name of Facility)

Reprocessing

(Facility Function)

Savannah River Site

Savannah River Nuclear Solutions

(Laboratory, Site, or Organization)

Name: Burns, R.

Telephone No.: (803) 208-8419

(Facility Manager/Designee)

Name: Abshire, Robert

Telephone No.: (803) 208-3026

(Originator/Transmitter)

Name: Abshire, R.

Date: 01/03/2019

(Authorized Classifier (AC))

1. Occurrence Report Number: EM-SR--SRNS-HCAN-2018-0013

Contamination Found on First Level of 221-H-Canyon (U)

2. Report Type and Date: FINAL

	Date	Time
Notification:	12/18/2018	10:09 (ETZ)
Initial Update:	12/18/2018	10:09 (ETZ)
Latest Update:	01/16/2019	10:57 (ETZ)
Final:	01/16/2019	10:57 (ETZ)

Report Level: L

4. Division or Project: SRNS/M&O/NMD/HMD

5. Secretarial Office: EM - Environmental Management

6. System, Bldg., or Equipment: 221-H Canyon

7. UCNI?: No

Reviewed for Public Release:

8. Plant Area: H-Area

9. Date and Time Discovered: 12/02/2018 12:15 (ETZ)

10. Date and Time Categorized: 12/03/2018 07:30 (ETZ)

11. DOE HQ OC Notification:

Date	Time	Person Notified	Organization
NA	NA	NA	NA

12. Other Notifications:

Date	Time	Person Notified	Organization
12/03/2018	07:45 (ETZ)	D. Sanders	DFM
12/03/2018	08:06 (ETZ)	DNFSB	DNFSB
12/03/2018	08:00 (ETZ)	T. Kohler	FR
12/03/2018	07:50 (ETZ)	C. Borders	SRSOC
12/03/2018	08:01 (ETZ)	J. Lott	RCO FM
12/03/2018	08:05 (ETZ)	T. Tice	Eng Mgr
12/03/2018	07:30 (ETZ)	J. Bodkin	Ops Mgr

13. Subject or Title of Occurrence:

Contamination Found on First Level of 221-H-Canyon (U)

14. Reporting Criteria:

6B(3) - Identification of onsite radioactive contamination greater than 10 times and no greater than 100 times the total contamination values in 10 CFR Part 835, Appendix D, exclusive of footnote 3 to Appendix D, and that is found outside of the following locations: areas routinely posted, controlled, and monitored for contamination; areas controlled in accordance with 10 CFR Section 835.1102(c); and, per 10 CFR Section 835.604(a), any non-posted area that is under the continual observation and control of an individual knowledgeable of and empowered to implement required access and exposure control measures. For tritium, the reporting threshold is 10 times the removable contamination values in 10 CFR Part 835, Appendix D.

15. Description of Occurrence:

On Sunday, December 2, 2018, the 221-H Canyon RPD FLM reported rainwater intrusion at 221-H -Canyon 1st level, section 5/6 expansion joint at a location where previous rainwater intrusions had occurred. Radiological Protection Department (RPD) performed surveys of the area and found 80,000 d/p/m beta-gamma contamination and no detectable alpha contamination. This radiation contamination level is greater than 10 times but no greater than 100 times the total contamination values in 10 CFR 835 Appendix D.

16. Is Subcontractor Involved? No

19. Immediate Actions Taken and Results:

The area where the contamination was found was reposted as a Contamination Area. The rainwater was removed and additional surveys were performed throughout the facility to identify other rainwater intrusion points. The area will continue to be monitored for additional leaks. No other radiological contamination was identified.

This occurrence was categorized on 12/03/18 at 0730 hours, which is longer than two (2) hours from discovery on 12/02/18 at 1215 hours. The delay in categorization was due to a change in interpretation for containment. This change has been communicated to applicable personnel.

20. ISM:

5) Provide Feedback and Continuous Improvement

21. Cause Code(s):

A2B6C02 - Defective or failed material

A7B2C01 - Legacy contamination

22. Description of Cause:

Background:

The expansion joints between the sections of the building also run vertically from the roof to the first floor. Over time, some of these joints have failed and rain water migrates into the facility. Efforts have been made to stop the migration of rain water, but in certain locations its continues. This migration of rain water could also cause contamination to migrate to the clean parts of the building.

Cause:

The cause of this event was categorized using Causal Analysis Tree (CAT) as A2 Equipment / Material Problem / B6 Defective, Failed or Contaminated / C02 Defective or Failed Material and A7 Other Problem / B2 Radiological /Hazardous Material Problem / C01 Legacy Contamination. The rain water is migrating from the roof to the first floor through the expansion joint and picks up contamination that is then detected with the rain water in the clean area of the first floor. In this event RPD detected 80,000 d/p/m beta-gamma contamination and no detectable alpha contamination at the section 5/6 expansion joint on the first floor of 221-H -Canyon. This location has a history of previous rainwater intrusions.

Corrective Action (CA) #1 was to develop a plan for repairing the roof of 221-H Canyon to prevent intrusion of rain water.

The root cause of this occurrence was determined in accordance with the requirements of Manual 22Q Procedure CAP-1 "Corrective Action Program".

25. Corrective Actions

Local Tracking System Name: STAR - Site Tracking, Analysis and Reporting

1. Develop a plan for repairing the roof of 221-H Canyon to prevent intrusion of rain water.

Target Completion Date: 12/19/2019

Tracking ID: 2018-CTS-012615, CA #5

26. Lessons Learned:

This report reinforces the importance of monitoring known locations where rain water intrusions have occurred to identify the in leakage so mitigation steps can be initiated.

The H-Canyon Deputy Facility Manager, D. Sanders (803) 208-3341, has reviewed and signed a copy of this report and concurs with its contents.

27. Similar Occurrence Report Numbers:

None

30. HQ Keyword(s):

06B--Radiological - Facility/Equip/Site Contamination

11D--Other - Natural Phenomena

12M--EH Categories - Radiological Control (Other)

14L--Quality Assurance - No QA Deficiency

31. HQ Summary:

On December 2, 2018, the 221-H Canyon Radiological Protection Department First Line Manager reported rainwater intrusion at 221-H -Canyon first level, section 5/6 expansion joint at a location where previous rainwater intrusions had occurred. Radiological Protection Department performed surveys of the area and found 80,000 disintegrations per minute beta-gamma contamination and no detectable alpha contamination. This radiation contamination level is greater than 10 times but not greater than 100 times the total contamination values in 10 Code of Federal Regulations 835 Appendix D. The area where the contamination was found was reposted as a contamination area. The rainwater was removed, and additional surveys were performed throughout the facility to identify other rainwater intrusion points. The area will continue to be monitored for additional leaks. No other radiological contamination was identified.

SRS Watch on line:

<http://www.srswatch.org/>

<https://www.facebook.com/SavannahRiverSiteWatch>

<https://twitter.com/srswatch>