

108645

**ENVIRONMENTAL COMPLIANCE & AREA COMPLETION PROJECTS (EC&ACP) STANDARD  
OPERATING PROCEDURES, VOL. I**
**Manual:** C3  
**Procedure:** ER-IDS-019-063  
**Revision:** 3  
**Effective Date:** 10/25/2016  
**Type-Class:** Form  
**Page:** 1 of 2

**R-AREA OPERABLE UNIT REACTOR BUILDING AND DISASSEMBLY BASIN FIELD INSPECTION  
CHECKLIST**

 8  
 11/2/18

**WORKING COPY**

This document is a Working Copy. Prior to start of work, verify this is the latest revision per the Procedure Index.

*Charles P. Carter*  
 Verified By

 10-23-17  
 Date

**CAUTION**

The Inspector shall IMMEDIATELY notify the Post-Closure Manager and Environmental Compliance Authority if there has been a breach or compromise of the institutional controls of this waste unit. This notification shall be in accordance with Savannah River Site post-closure inspection procedures.

**NOTE**

1. Manual C3, ER-SOP-019, *Waste Unit Inspection and Maintenance*, shall be referred to for inspection details.
2. Steps in this checklist may be completed concurrently or in any order.
3. Due to high elevation and area(s) of the roofs that are not easily accessible, this verification may be performed by reviewing and evaluating the aerial photos obtained annually and by comparing them to the baseline photos located in the EC&ACP Document Control under R-Area CD (SRNS-MM-2013-00013). Changes such as structural collapses, visual water seepage from lower portions of the building, visible changes in standing water, or drainage patterns on the roofs shall be evaluated for action. This method of inspection may continue until at such time that a walk down inspection of the roofs is necessary and possible repairs are needed. Any photos used for this evaluation shall be attached to the inspection report and included in the file submitted to EC&ACP Document Control.

 **SCHEDULED**
 **UNSCHEDULED**

A = Satisfactory	A or X	Observation/Corrective Action Taken
X = Unsatisfactory (Explanation required)		
1. Verify roads are accessible to 105-R Reactor Building and Basin.	A	
2. Verify 105-R Reactor Building Complex roofs are functioning and free of woody vegetation. Submit inspection reports to Cognizant Technical Function to review and evaluate functionality of roofs. (REFER TO Note 3).	X	CARRY OVER ITEM: VEGETATION GROWING ON ROOF SEE MAP NOTE (D). REF MAINT. REGISTER - PL-1015-00105

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## R-Area Operable Unit Reactor Building and Disassembly Basin Field Inspection Checklist

 SCHEDULED UNSCHEDULED

A = Satisfactory	A or X	Observation/Corrective Action Taken
X = Unsatisfactory (Explanation required)		
3. Verify access doors to 105-R Reactor Building complex and concrete cover at 108-1R and 108-2R Engine House are sealed.	A	
4. Verify excessive deterioration of disassembly basin cover has not occurred and basin cover is free from debris and woody vegetation.	X	SEVERAL AREAS OF CAULKING IN EXPANSION JOINTS NEED REPAIR. SEE MAP NOTE (2). REF. MAINT. REGISTER PC-2017-00089
5. Check integrity of stone armament for presence of excessive erosion. Maintain area surrounding building up to and including perimeter roads for vegetation.	A	
6. Verify there are no unauthorized excavations, digging, or construction activities at or in close vicinity of building.	A	
7. Other NOTICED CONCRETE SPALLS ON THE WEST CORNERS OF EL. 88.25. THE SPALLING IS DIRECTLY UNDER THE CONCRETE ROOF CAP.	NOTE	REF. E-MAIL FROM GUY BALDWIN TO WILLIAM GREFFEN. DATED OCTOBER 31, 2019. SEE ATTACHED. ALSO SEE MAP NOTE (3) FOR LOCATION OF SPALLING.

## Inspected By

CHARLES F. CARTER / Richard Feagin Charles F. Carter / Richard Feagin 10-23-17 / 10-25-17  
 (Print Name) (Signature) (Date)

## Review By Cognizant Technical Function

PETER AVEDLI / Peter Avedli 12-11-17  
 (Print Name) (Signature) (Date)

## Review By Post-Closure Manager

George W. Joyner / George W. Joyner 12/12/17  
 (Print Name) (Signature) (Date)

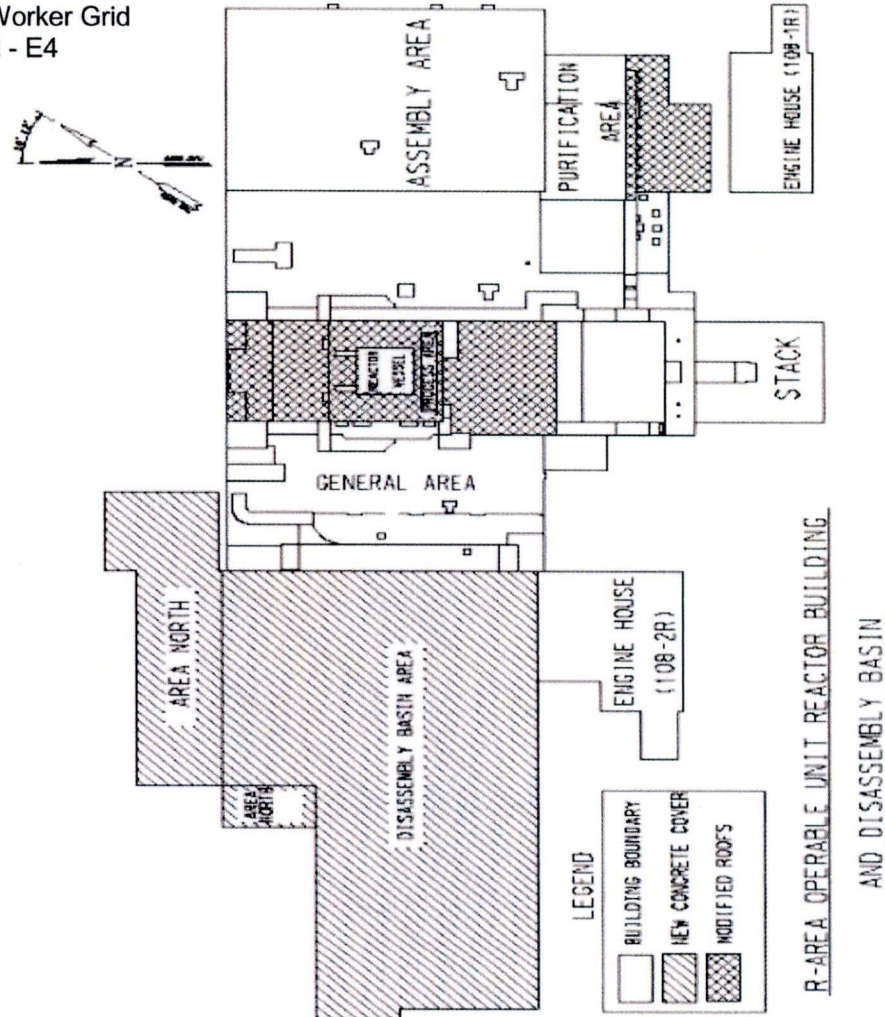
R-Area Operable Unit Reactor Building and Disassembly  
Basin Field Inspection Checklist

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R-Area Operable Unit Reactor Building and Disassembly Basin

del  
 4/12/18

Remote Worker Grid  
 N-2 - E4



NOTES: (1) CARRY OVER ITEM: VEGETATION GROWING ON ROOFS. ACP WILL DEVELOPE A WORK PACICALE TO REMOVE VEGETATION AS WELL AS REMOVE SILT, SAND AND DEBRIS FROM ROOFS (2) = ACP WILL DEVELOPE A WORK PACKAGE TO REPAIR CAULK JOINTS ON THE DISASSEMBLY BASIN COVER. (3) = AREA OF CONCRETE SPALLING.

SEE ATTACHED FOR CTP REVIEW & COMMENTS

Condition of the roofs remained the same since last inspection. There was no further deterioration at the edge of concrete roof were stack was located. Vegetation growth is present at various areas on the roof. The sediment should be removed to eliminate and prevent vegetation. Some spots exist on the roof that cause the potential for pooling water. Spalled concrete was identified on the west corners of the +88.25 roof, attached is the design engineering report. Please see pictures for further details.

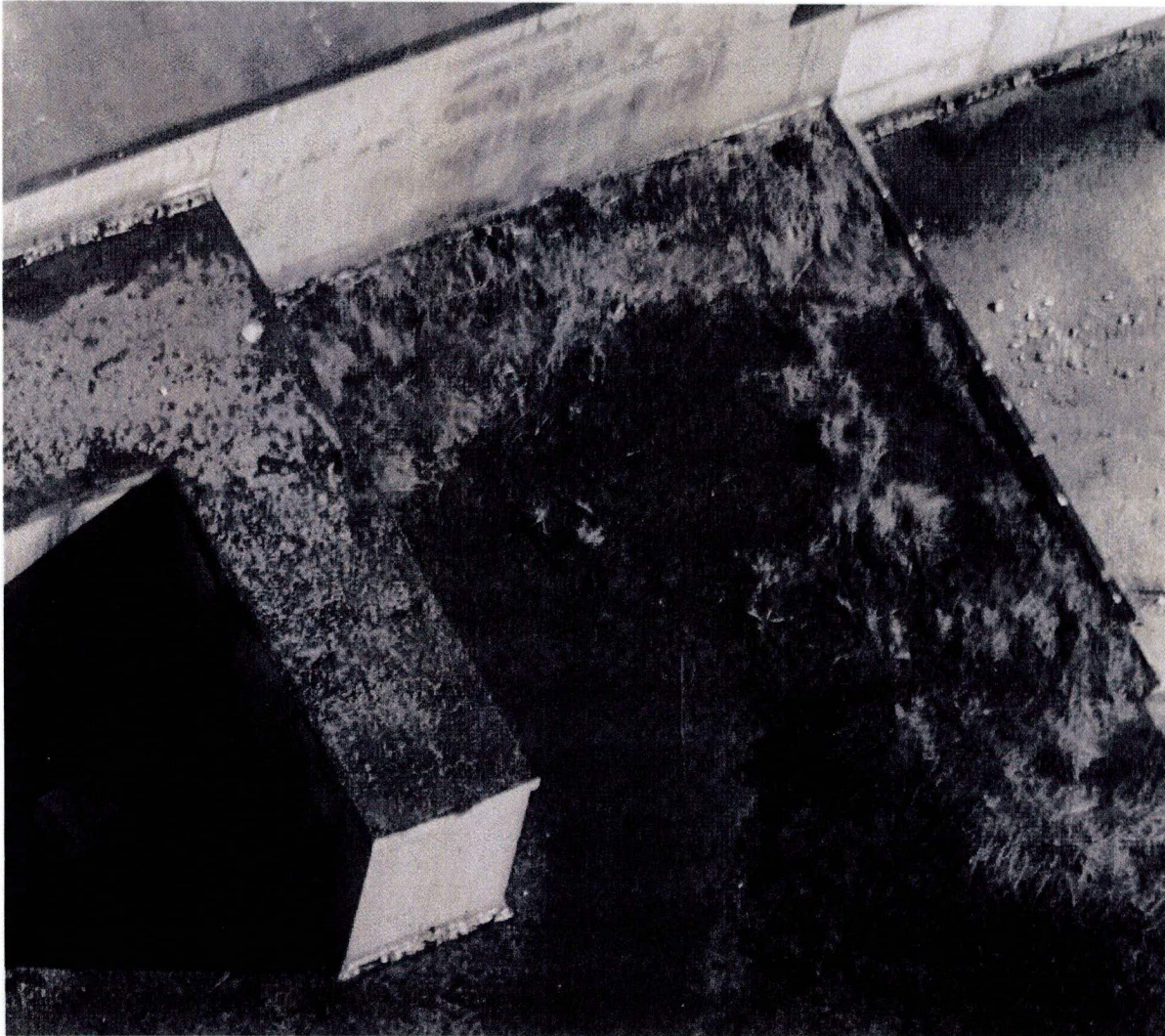


Figure 1: Vegetation

2017, 105-R Inspection

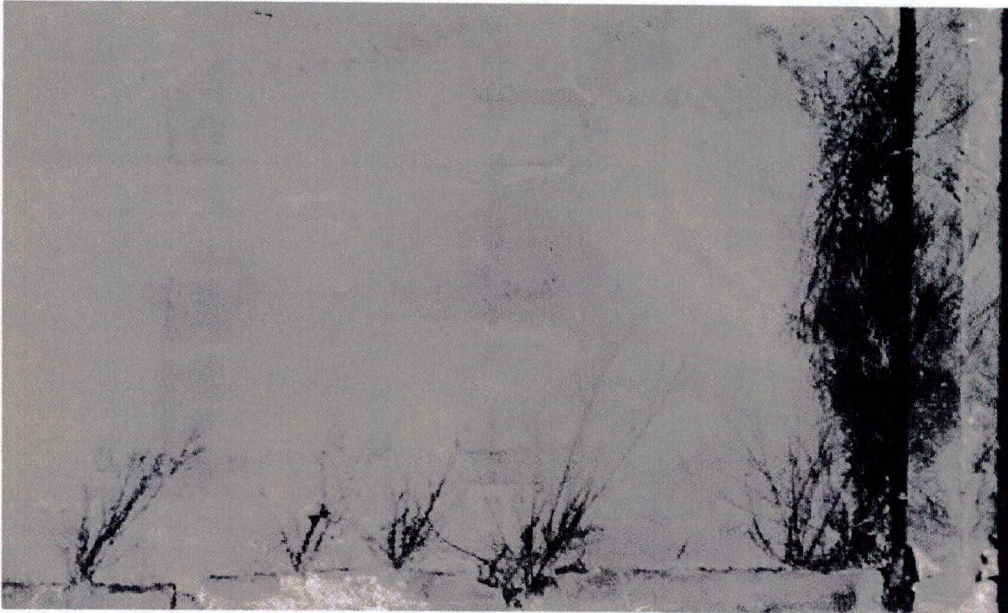


Figure 2: Vegetation



Figure 3: Potential Area for Pooling

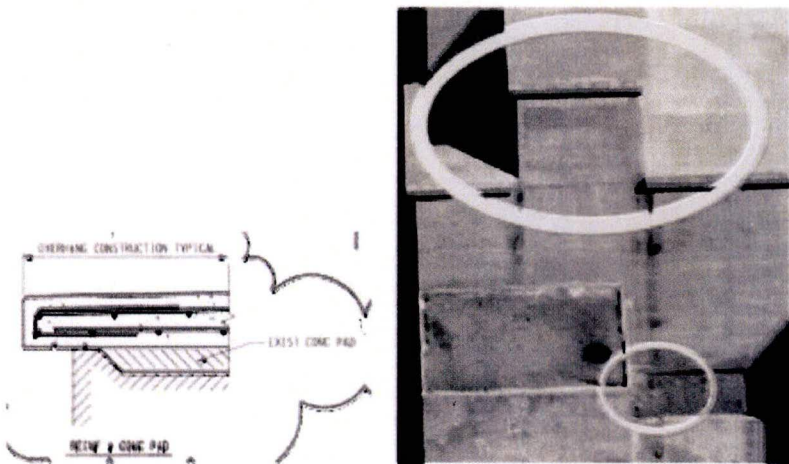
**Richard Feagin**

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**From:** Peter Avioli  
**Sent:** Tuesday, October 31, 2017 8:24 AM  
**To:** Richard Feagin; Kelsey Holcomb  
**Subject:** FW: R-Reactor Photos - Original Concrete Flaw

FYI

**From:** Guy Baldwin  
**Sent:** Tuesday, October 31, 2017 8:16 AM  
**To:** William Griffin <William.Griffin@srs.gov>  
**Cc:** Benjamin Walker <Benjamin.Walker@srs.gov>; Peter Avioli <Peter.Avioli@srs.gov>; Shawn Carey <Shawn.Carey@srs.gov>  
**Subject:** RE: R-Reactor Photos - Original Concrete Flaw



Bill,

From our conversations, it appears these spalls on the west corners of the El. 88.25 roof happened some time ago for unknown causes, probably soon after or during the activity of stripping the forms in 2011. It is noted from the aerial photo that some of the concrete shards landed harmlessly on the roof below and are still there.

Review of the drawing C-CC-R-00019, Sections F and H show the cap to be well reinforced with #6@18" each way and each face with "U-bars" for the cantilever load which is slightly increased by the spall of the corners below the roof slab. The spalled concrete is from the unreinforced concrete cover at the corner of the non-structural concrete curbs. The curbs are considered non-structural in the sense they do not contribute to the structural strength of the building. Given that the cap slab corner strength is undiminished by the spalls and the unreinforced concrete curb corners do not contribute to the overall strength of the building, this is considered an issue to put on the watch list for future deterioration, but not in need of immediate repair.

Guy Baldwin, PE  
 Structural Mechanics  
 Phone 28971

**From:** William Griffin  
**Sent:** Monday, October 30, 2017 11:39 AM  
**To:** Guy Baldwin <[guy.baldwin@srs.gov](mailto:guy.baldwin@srs.gov)>  
**Subject:** FW: R-Reactor Photos - Original Concrete Flaw

**From:** Peter Avioli  
**Sent:** Monday, October 30, 2017 11:33 AM  
**To:** William Griffin <[William.Griffin@srs.gov](mailto:William.Griffin@srs.gov)>  
**Subject:** RE: R-Reactor Photos - Original Concrete Flaw

Bill,

The drawings I have of the cap are, C-CC-R-00018, and C-CC-R-00019. The drawings of the reactor building (area that is spalling) are, W120471, W131414, and W131522.

The north side (DSC\_0003) cannot be seen in past photos and appears to be new this year. The wall thickness on this side is 1'-3" (W131522). The south side (DSC\_0013) appears to have started in-between 2011-2012. The original wall thickness on this side was 1'-8" (W131522). These photos were taken on 10/24.

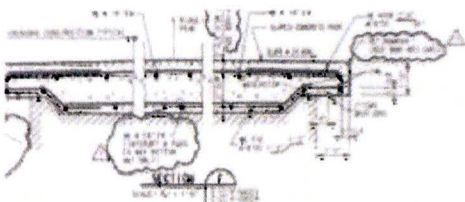
I don't have any good pictures of the grid-pattern but I believe they are pavers that were places on top of the roof.

Let me know if I can do anything else to help.

Thanks,  
Peter

**From:** Guy Baldwin  
**Sent:** Friday, October 27, 2017 10:17 AM  
**To:** William Griffin <[William.Griffin@srs.gov](mailto:William.Griffin@srs.gov)>  
**Cc:** Peter Avioli <[Peter.Avioli@srs.gov](mailto:Peter.Avioli@srs.gov)>; Shawn Carey <[Shawn.Carey@srs.gov](mailto:Shawn.Carey@srs.gov)>; Benjamin Walker <[Benjamin.Walker@srs.gov](mailto:Benjamin.Walker@srs.gov)>  
**Subject:** FW: R-Reactor Photos - Original Concrete Flaw

Was the roof slab supposed to be like the section below from the 105P Building?



**From:** Guy Baldwin  
**Sent:** Friday, October 27, 2017 10:05 AM  
**To:** William Griffin <[William.Griffin@srs.gov](mailto:William.Griffin@srs.gov)>  
**Cc:** Peter Avioli <[Peter.Avioli@srs.gov](mailto:Peter.Avioli@srs.gov)>; Shawn Carey <[Shawn.Carey@srs.gov](mailto:Shawn.Carey@srs.gov)>; Benjamin Walker

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<Benjamin.Walker@srs.gov>

**Subject:** RE: R-Reactor Photos - Original Concrete Flaw

Do you know when the aerial photo was taken? The spalled corner can be seen in the aerial photo and when it is magnified the debris on the roof below. What is the grid pattern on the lower roof?

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**From:** William Griffin

**Sent:** Tuesday, October 24, 2017 12:18 PM

**To:** Guy Baldwin <guy.baldwin@srs.gov>; Shawn Carey <Shawn.Carey@srs.gov>

**Cc:** Peter Avioli <Peter.Avioli@srs.gov>

**Subject:** FW: R-Reactor Photos - Original Concrete Flaw

Peter Avioli took these this morning at 105-R while performing his routine rounds. I'm attaching an aerial view to show you where these are. What are your thoughts on this condition and what may have caused it? Any recommendation as whether to repair or just watch?

Thanks.

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**From:** Peter Avioli

**Sent:** Tuesday, October 24, 2017 11:10 AM

**To:** William Griffin <William.Griffin@srs.gov>

**Subject:** R-Reactor Photos - Original Concrete Flaw

Images are attached.

*Peter Avioli*

Savannah River Nuclear Solutions  
Associate Engineer  
(803) 952-6533

# POST CLOSURE MAINTENANCE REGISTER

**Index Number**

**Unit Name**

1921 R-AREA OPERABLE UNIT, REACTOR BUILDING AND DISASSEMBLY BASIN (105-R)

**Watershed** LOWER THREE RUNS

AHA # AHA-ER-7807

Work Order # 1750385

Work Group POST CLOSURE MAINTENANCE

Priority Medium

RCRA NO

**Maintenance Number** PC-2017-00089

Maintenance Status Complete

Inspection Date 10/23/2017

Chemical Type NA

Completion Date 6/28/2020

Chemical Name

Amount Used

## Description Of Maintenance Item

Several areas of caulking in expansion joints on the Disassembly Basin Cover need repair.

## Maintenance Item Corrected

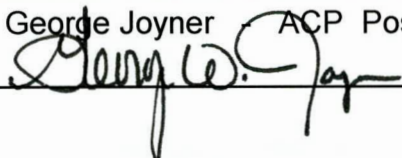
Resealed expansion joints

**Notes** New observation

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Approved by : George Joyner ACP Post Closure Manager

Signature



Approval date :

7/1/2020