State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Douglas J. Hansen
Director

A meeting of the Waste Management and Radiation Control Board has been scheduled for July 8, 2021 at 1:30 pm at the Utah Department of Environmental Quality, (Multi-Agency State Office Building) Conference Room #1015, 195 North 1950 West, SLC.

(Board members and interested persons may participate electronically/telephonically.)
Join via the Internet: meet.google.com/gad-sxsd-uvs
Join via the Phone: (US) +1 978-593-3748 PIN: 902 672 356#

Agenda

I. Call to Order.

II. Public Comments on Agenda Items.

III. Declarations of Conflict of Interest.

IV. Approval of the Meeting Minutes for the June 10, 2021 Board Meeting (**Board Action Item**) ... Tab 1

V. Underground Storage Tanks Update ..... Tab 2

VI. Hazardous Waste Section ..... Tab 3

A. Approval of Proposed Stipulation and Consent Order between the Division Director and Clean Harbors Aragonite, LLC (**Board Action Item**).

VII. Administrative Rules ..... Tab 4

A. Five Year Review of Rule R315-319 of the Utah Administrative Code (Information Item).

VIII. X-Ray Program ..... Tab 5

A. X-ray Registration and Inspection Fee Increases (Information Item).

(Over)

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IX. Low-Level Radioactive Waste Section..... Tab 6

A. Energy*Solutions* request for a one-time site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive ash contaminated with dioxins and furans as UHCs for treatment and disposal (Information Item).

B. Proposed Stipulation and Consent Order between the Division Director and Energy*Solutions* (Information Item).

X. Other Business.

A. Miscellaneous Informational Items.
B. Scheduling of next Board meeting (September 9, 2021).

XI. Adjourn.

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Larene Wyss, Office of Human Resources at (801) 536-4284, Telecommunications Relay Service 711, or by email at "lwyss@utah.gov".

Waste Management and Radiation Control Board Meeting
Utah Department of Environmental Quality
(Multi-Agency State Office Building, Conf. Room #1015)
195 North 1950 West, SLC
June 10, 2021
1:30 p.m.

Board Members participating at Anchor Location:
Brett Mickelson (Chair), Dennis Riding (Vice-Chair), Mark Franc, Nathan Rich, Kim Shelley, Shane Whitney

Board Members participating Electronically/Telephonically:
Richard Codell, Danielle Endres, Vern Rogers

Board Members Excused:
Steve McIff

UDEQ staff members participating at Anchor Location:
Doug Hansen, Brent Everett, Morgan Atkinson, Tom Ball, Theron Blatter, Jalynn Knudsen, Arlene Lovato, Connie Nakahara, Stevie Norcross, Rick Page, Mike Pecorelli, Bret Randall, Elisa Smith, Otis Willoughby, David Wilson, Adam Wingate

Others attending at Anchor Location:
Tyson Hone, Dan Shrum, William Simmons, Dwayne Woolley

Other UDEQ employees, and interested members of the general public also participated either electronically or telephonically.

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I. Call to Order.
Chairman Mickelson welcomed all and expressed his happiness in seeing all attendees in person. (This is the first in-person meeting being conducted in the last 15 months, due to the pandemic). Chairman Mickelson called the meeting to order at 1:30 pm; roll call of Board members was conducted (see above).

II. Public Comments on Agenda Items - None.

III. Declarations of Conflict of Interest - None.

IV. Approval of the Meeting Minutes for the May 13, 2021 Board Meeting (Board Action Item).
It was moved by Shane Whitney and seconded by Nathan Rich and UNANIMOUSLY CARRIED to approve the May 13, 2021 Board meeting minutes.

V. Underground Storage Tanks Update.

Brent Everett, Director of the Division of Environmental Response and Remediation (DERR), informed the Board that the cash balance of the Petroleum Storage Tank (PST) Trust Fund at the end of April 2021 is $20,162,842.00. The preliminary estimate of the cash balance of the PST Trust Fund for the end of May 2021 is $20,715,654.00. The DERR continues to watch the balance of the PST Trust Fund closely to ensure sufficient cash is available to provide coverage of qualified claims for releases.

Dennis Riding asked if there is a cap on the PST Trust Fund as it continues to grow. Director Everett stated that with the most recent legislation the PST Trust Fund the cap was lifted from 30 million to 50 million. The cap needed to be raised in anticipation of aboveground storage tank (AST) cleanup costs in the future as well.

Mark Franc asked if there is a requirement that the balance of the PST Trust Fund be presented to the Board on a monthly basis. Mr. Everett stated that it is not a requirement, but because the Board has responsibility

for the rules that govern the implementation of the underground storage tank (UST) program and an interest in cleanups taking place, the information is provided at each meeting. Additional information is provided in the packet to the Board which shows more of the program operations. The DERR would be happy to modify the presentation to the Board if other information is useful. The DERR also provides an actuarial report on the PST Trust Fund annually to the Board, legislators, and other stakeholders. The PST Trust Fund balance is critical to the implementation of the program and if there were issues, the DERR would request help from the Board.

Director Everett let the Board know that due to legislation passed this year, registration of ASTs in Utah is required by June 30, 2022. The deadline for these ASTs to provide documentation of financial assurance is June 30, 2023. The DERR has begun creating registration forms and is using multiple sources of outreach to get the information to the AST community. As of May 5, 2021, any AST with a release is required to report that release to the DERR. Additional rules for ASTs will be brought before the Board in the future. A suggestion was made to use companies that distribute fuel to assist in getting the word out about AST regulation.

VI. Approval of proposed changes to the following Underground Storage Tank Rules for initial publication and 30-day public comment period (Board Action Item).

- **R311-200, Underground Storage Tanks: Definitions.**
- **R311-201, Underground Storage Tanks: Certification Programs and UST Operator Training.**
- **R311-203, Underground Storage Tanks: Technical Standards.**
- **R311-204, Underground Storage Tanks: Closure and Remediation.**
- **R311-205, Underground Storage Tanks: Site Assessment Protocol.**
- **R311-206, Underground Storage Tanks: Certificate of Compliance and Financial Assurance Mechanisms.**
- **R311-207, Accessing the Petroleum Storage Tank Trust Fund for Leaking Petroleum Storage Tanks.**
- **R311-208, Underground Storage Tank Penalty Guidance.**
- **R311-209, Petroleum Storage Tank Cleanup Fund and State Cleanup Appropriation.**
- **R311-212, Administration of the Petroleum Storage Tank Loan Program.**

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Mr. Wilson explained that these proposed changes were presented to the Board in May. Most of the rule changes, except for section 207, are minor corrections and clarifications of existing rule language. An informal public comment period was held during April and May of 2021. Four comments were received. Most comments were based on proposed labor rates and cost guidelines. The labor rates have been updated to reflect the 2020 Federal Consumer Price Index values. One minor correction was also made during the review process regarding cost guidelines, which was missing. The language has been added. The DERR is requesting approval to proceed with a formal public comment period for these rule changes.

Mr. Riding asked a question about changing the word petroleum to a hazardous substance. Mr. Wilson explained that this is to come into compliance with Federal Regulations.

It was moved by Dennis Riding and seconded by Mark Franc and UNANIMOUSLY CARRIED to approve the DERR moving forward with the formal public comment period for proposed rule changes.

VII. Hazardous Waste Section (Information Item).

A. Proposed Stipulation and Consent Order between the Board and Clean Harbors, Aragonite (Information Item).

Rick Page, Environmental Engineer in the Hazardous Waste Section of the Division of Waste Management and Radiation Control, reviewed the proposed Stipulation and Consent Order (SCO), No. 2004048, to resolve Notice of Violation (NOV) No. 2001004, issued to CHA on April 8, 2020.

The NOV was based on information documented during an inspection at the facility on September 9-26, 2019, and several self-reported notices of non-compliance for the time period of October 1, 2018 to September 30, 2019 (fiscal year 2019).

With the exception of Violation Number 7 from NOV (relating to generic profiles), the violations have been resolved. Due to overlap with a current EPA enforcement action, the Division is postponing enforcement of Violation Number 7 from the NOV. The SCO includes a penalty of $80,630.00. Copies of the NOV, the SCO, and the penalty narrative worksheet were provided to the Board in their June 10, 2021 Board packet.

This is an informational item for the Board. Section §19-6-104 of the Utah Solid and Hazardous Waste Act authorizes the Board to issue orders and approve or disapprove settlements negotiated by the Director with a civil penalty over $25,000.

No Board action is required at this time. A 30-day public comment period is currently underway. Following the 30-day public comment period, this matter will be brought before the Board for action in a future meeting.

Mark Franc questioned the timing to resolve the NOV, as the NOV was issued over a year and a half ago. He realizes the extenuating circumstances that involve the EPA, but questioned if 18 months is the standard timeframe from the NOV issuance to a SCO resolution, or if this is a longer than normal timeframe.

Mr. Page stated that the inspection was conducted in September 2019 and it took several months to compile all the reports to issue the NOV. The NOV was issued in April of 2020 and the proposed SCO is now currently out for a 30-day public comment period.

Mr. Page further stated that he is actually quite excited about the timing on this matter, as previous resolutions for this facility have taken a number of years to resolve. Mr. Page clarified even though this matter had extenuating circumstances with the EPA, the goal is to always resolve an NOV as soon as possible. Mr. Page briefly explained the additional extenuating circumstances associated with profiling and the EPA's involvement regarding incineration of metal bearing waste at Clean Harbors facilities.

Mr. Franc also asked how the Division verifies the violations are resolved and not on-going.

Mr. Page clarified that the violations that can be resolved are taken care of during the inspection, while other violations take implementing new procedures, and in this case the profiling issue is still an ongoing matter that needs to be resolved, but the vast majority of the violations have been resolved.

Danielle Endres stated that in the information provided, it mentioned that some of the violations were self-reported notices of non-compliance and asked for clarification regarding how these types of self-reported notices are dealt with, including how a self-reported notice of non-compliance differs from what is discovered during the inspection.

Rick Page stated that the facility is required by their permit to report any issues of non-compliance discovered. This facility has been really good at reporting any violations they discover. The main difference comes when the Division calculates the penalty, the self-reported notices are calculated in the penalty and a discount may then be given for any self-reported notices of non-compliance.

VIII. X-Ray Program.

A. Mammography Imaging Medical Physicists Annual Renewal Requirements. (Information Item)

Tom Ball, Planning and Technical Support Manager of the Division of Waste Management and Radiation Control, provided the following information to the Board relative to Mr. Dennis Riding inquiry in the

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May 13, 2021 Board meeting as to why the Mammography Imaging Medical Physicists Renewal Requirements is an annual requirement instead of less frequently like every two years.

At that meeting, Mr. Ball did not have a complete answer and promised to research the issue and return to the Board with more information. Research into the issue revealed that current state rules do not have a specific requirement for annual renewal. R313-28-120(2)(b) states that MIMPs are required to perform at least two surveys during the 12-month period from June 1 and May 31 to remain certified by the Board.

The Division has interpreted this rule to require the annual renewal of certification. The Division was not able to locate any documentation regarding the basis for this interpretation. Further research into the rule language revealed that current state rules are not in sync with rules currently in place at the federal level. 21 CFR 900.12 contains the Food and Drug Administration (FDA) quality standards and certification requirements for MIMPs. 21 CFR 900.12(3)(iii)(B) requires MIMPs to have surveyed at least two facilities and six mammography units during a 24-month period. The research into the FDA regulations revealed that the 24-month requirement has been in place since the creation of the regulations in 1997.

The Division was not able to locate any documentation containing the reasons that 12-months was used in state rules instead of 24-months. Current Division personnel working in the X-ray program do not believe there are any reasons why the recertification requirement could not be changed to 24-months.

This is an informational item. The Division will review the existing state rules for MIMP recertification and will return to the Board at a future meeting with proposed changes to these rules.

Mr. Ball stated the mammography program in Utah is under a contract with the FDA. The FDA pays the state of Utah to run the program. If the state of Utah did not run the program; the FDA would run it in Utah. Utah, like most states runs this program under a contract with the FDA, because they want to have a bit more control over the programs in their state, rather than having the federal government having the oversight of the program in their state.

The future plan is to prepare some rule amendments to Utah's mammography qualifications, with the goal of making them more in sync with the FDA regulations. Mr. Ball anticipates bringing proposed rule changes to the Board to go out for public comment in a future meeting.

Nathan Rich thanked Mr. Ball for his follow-up and research on this matter. Mr. Rich had questions related to recertification. Specifically, how is initial certification handled and is it combined with the recertification, in which case 24 months may be too long to make somebody wait?

Mr. Ball informed the Board that the initial certification could be done at any time and initial certification actually happens very infrequently, but would require Board approval as well.

Dennis Riding also thanked Mr. Ball for all his efforts in researching this matter.

IX. Director's Report.

Doug Hansen, Director of the Division of Waste Management and Radiation Control, reported that the building is open and Division staff are in the office, but we will continue to operate board meetings in a hybrid model. For those Board members and others who want to meet virtually, the Division will continue to improve to meet that goal with available technology. As this is a new era for the Division and will continue to be in the foreseeable future, the Division is excited about it. Mr. Hansen stated this new hybrid model opens opportunities for us that we have not had in the past to continue to interact with people in new ways, and hopefully it will be more convenient for those that need to interact with us from the outside the Department, as they do not need to fly or drive across the valley to have access to us. Mr. Hansen also

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acknowledged that it is good seeing everybody in person and that we are committed to work through issues together as we figure out what this hybrid model looks like.

X. Other Business.

A. Miscellaneous Information Items. – **None**.

B. Scheduling of next Board meeting.
The next meeting is scheduled for July 8, 2021.

XI. Adjourn.

The meeting adjourned at 2:10 p.m.

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UST STATISTICAL SUMMARY

April 1, 2020 --May 31, 2021

PROGRAM

	4146	July	August	September	October	November	December	January	February	March	April	May	(+/-) OR Total
Regulated Tanks	4,123	4,128	4,128	4,135	4,130	4,127	4,130	4,144	4,144	4,145	4,136	4,146	**23**
Tanks with Certificate of Compliance	4,009	4,033	4,029	4,027	4,027	4,039	4,044	4,051	4,051	4,053	4,058	4,063	**54**
Tanks without COC	114	95	99	108	103	88	86	93	93	92	78	83	**(31)**
Cumulative Facilitlies with Registered A Operators	1,289	1,255	1,250	1,084	1,104	1,108	1,111	1,252	1,252	1,256	1,251	1,250	**94.91%**
Cumulative Facilitlies with Registered B Operators	1,291	1,292	1,287	1,142	1,147	1,150	1,147	1,285	1,285	1,292	1,253	1,251	**94.99%**
New LUST Sites	4	3	11	5	8	8	8	5	5	10	5	2	**74**
Closed LUST Sites	4	2	6	3	7	2	6	4	4	16	3	4	**61**
Cumulative Closed LUST Sites	5292	5295	5301	5302	5310	5315	5323	5329	5329	5350	5352	5356	**64**

FINANCIAL

	June	July	August	September	October	November	December	January	February	March	April	May	(+/-)
Tanks on PST Fund	2,642	2,662	2,661	2,657	2,654	2,666	2,667	2,666	2,666	2,666	2,663	2,664	**22**
PST Claims (Cumulative)	684	685	685	687	688	688	688	688	688	689	690	693	**9**
Equity Balance	-$8,712,595	-$7,717,022	-$7,373,152	-$7,311,417	-$10,201,999	-$9,462,843	-$9,547,189	-$8,950,746	$8,633,383	-$8,709,493	-$8,272,438	-$7,719,626	**$992,969**
Cash Balance	$17,405,685	$18,401,258	$18,745,128	$18,806,863	$18,233,281	$18,972,437	$18,888,091	$19,484,534	$19,801,897	$19,725,787	$20,162,842	$20,715,654	**$3,309,969**
Loans	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Cumulative Loans	121	121	121	121	121	121	121	121	121	121	121	121	**0**
Cumulative Amount	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	$4,738,367	**$0**
Defaults/Amount	2	2	2	2	2	2	2	2	2	2	2	2	**0**

	June	July	August	September	October	November	December	January	February	March	April	May	TOTAL
Speed Memos	50	7	38	95	72	73	42	48	48	75	42	81	**671**
Compliance Letters	5	15	18	32	30	9	14	15	15	18	13	8	**192**
Notice of Intent to Revoke	0	0	0	0	0	0	0	0	0	0	1	0	**1**
Orders	2	3	2	1	2	1	0	0	0	1	0	1	**13**

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
Clean Harbors Aragonite, LLC (CHA)
July 8, 2021

What is the issue before the Board?	This is a proposed Stipulation and Consent Order (SCO), No. 2004048, to resolve Notice of Violation (NOV) No. 2001004, issued to CHA on April 8, 2020.
What is the historical background or context for this issue?	The NOV was based on information documented during an inspection at the facility on September 9-26, 2019, and several self-reported notices of noncompliance for the time period of October 1, 2018, to September 30, 2019 (fiscal year 2019). With the exception of violation 7 (relating to generic profiles), the violations have been resolved. Due to overlap with a current US EPA enforcement action, we are postponing enforcement of violation 7. The SCO includes a penalty of $80,630.00.
What is the governing statutory or regulatory citation?	§19-6-104 of the Utah Solid and Hazardous Waste Act authorizes the Board to issue orders and approve or disapprove settlements negotiated by the Director with a civil penalty over $25,000.
Is Board action required?	Yes. A 30-day public comment period was held from June 7, 2021, through July 6, 2021. Pending no adverse comments, it will be presented to the Board for approval.
What is the Division Director's recommendation?	It is recommended that the Board approve this proposed SCO.
Where can more information be obtained?	For technical information, please contact Rick Page at (801) 536-0230. For legal information, please contact Connie Nakahara at (385) 414-0450. Copies of the NOV, the SCO, and the penalty narrative worksheets were included in the June 10, 2021, Board packet.

DSHW-2021-009232

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
Five Year Review for Rules R315-319
July 8, 2021

What is the issue before the Board?	Rule R315-319 of the Utah Administrative Code is due for a five-year review. This rule is a Solid Waste rule. If this rule is to continue, a Notice of Continuation (Five-Year Review) must be filed prior to the anniversary of the last five-year review. The anniversary date for this rule is September 1, 2021.
What is the historical background or context for this issue?	The Utah Administrative Rulemaking Act (Utah Code §63G-3-305) requires state agencies to review each of their administrative rules within five years of the rule's original effective date or the last five-year review. The purpose of the review is to provide agencies with an opportunity to evaluate the rules to assess if the rules should be continued. In performing a five-year review, an agency may consider the need to amend or repeal rules that are archaic in form, are no longer used, are not based on existing statutory authority or are otherwise unnecessary. If an agency determines that a rule needs to be amended or repealed this is done in a separate action. To retain a rule as part of the Utah Administrative Code, a "Five-Year Notice of Review and Statement of Continuation" must be filed with the Office of Administrative Rules, before the rule's five-year anniversary date. The form provided by the Office of Administrative Rules requires the following information: 1. A concise explanation of the particular statutory provisions under which the rule is enacted and how these provisions authorize the rule; 2. A summary of written comments received during and since the last five-year review of the rule from interested persons supporting or opposing the rule; and, 3. A reasoned justification for continuation of the rule, including reasons why the agency disagrees with comments in opposition to the rule, if any. Completing the form provided by the Office of Administrative Rules and filing it before the five-year review date satisfies the provisions of the Administrative Rulemaking Act with respect to a five-year review. The completed forms and copies of the rules listed above follow this Executive Summary.
What is the governing statutory or regulatory citation?	Utah Code §63G-3-305 and Utah Code §19-3-103.1, §19-6-105 and §19-6-106.

Is Board action required?	No. The Division is providing this information to keep the Board informed of Five-Year Reviews that have been conducted and are being submitted to the Office of Administrative Rules.
What is the Division Director's recommendation?	N/A
Where can more information be obtained?	Please contact Tom Ball by email at tball@utah.gov or by phone at (801)536-0251.

State of Utah
Administrative Rule Analysis
Revised June 2021

FIVE-YEAR NOTICE OF REVIEW AND STATEMENT OF CONTINUATION		
	Title No. - Rule No.	
Utah Admin. Code Ref (R no.):	**R315-319**	**Filing ID: (Office Use Only)**

Agency Information

1. Department:	Environmental Quality	
Agency:	Waste Management and Radiation Control	
Room no.:	Second Floor	
Building:	MASOB	
Street address:	195 N. 1950 W.	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	PO Box 144880	
City, state and zip:	Salt Lake City, Utah 84114-4880	
Contact person(s):		
Name:	**Phone:**	**Email:**
Tom Ball	801-536-0251	tball@utah.gov
Please address questions regarding information on this notice to the agency.		

General Information

2. Rule catchline:

R315-319. Coal Combustion Residuals Requirements.

3. A concise explanation of the particular statutory provisions under which the rule is enacted and how these provisions authorize or require this rule:

Utah Code Subsection 19-6-104(1)(c) requires the Waste Management and Radiation Control Board to meet the requirements of federal law related to solid and hazardous wastes to ensure that the solid and hazardous wastes program provided for in this part is qualified to assume primacy from the federal government in control over solid and hazardous waste.
Utah Code Subsection 19-6-108 requires a person who plans to own and operate a facility that receives waste generated primarily from the combustion of coal or other fossil fuels to submit a request to and receive the approval of the director for an operation plan for that facility site prior to purchasing, constructing, modifying, or operating such a facility.
The rule sets out the procedures and information that must be submitted to meet the requirements of the statute.

4. A summary of written comments received during and since the last five-year review of this rule from interested persons supporting or opposing this rule:

Rule R315-319 was first adopted with an effective date of September 1, 2016. This is the first five-year review of this rule and no comments have been received since it became effective.

5. A reasoned justification for continuation of this rule, including reasons why the agency disagrees with comments in opposition to this rule, if any:

Rule R315-319 contains the permit requirements, scope and applicability, definitions, restrictions, design and operating criteria, environmental monitoring requirements, closure requirements, and recordkeeping requirements for a coal combustion residuals facility. The rule forms the basis of the coal combustion residuals facility permitting program required by the Solid and Hazardous Waste Act and therefore should be continued.

Agency Authorization Information

To the agency: Information requested on this form is required by Section 63G-3-305. Incomplete forms will be returned to the agency for completion, possibly delaying publication in the *Utah State Bulletin*.

Agency head or designee, and title:	Douglas J. Hansen, Director	**Date** (mm/dd/yyyy)**:**	

Reminder: Text changes cannot be made with this type of rule filing. To change any text, please file an amendment or nonsubstantive change.

R315. Environmental Quality, Waste Management and Radiation Control, Waste Management.
R315-319. Coal Combustion Residuals Requirements.
R315-319-1. Permit Required.

(a) All landfills disposing of coal combustion residuals and surface impoundments containing coal combustion residuals shall have a permit for a Class I, II, or V landfill in accordance with Rules R315-302 through 307 or a coal combustion residuals permit issued under Rule R315-319.

(b) An application for a permit for a coal combustion residual landfill or surface impoundment or multiple landfills and impoundments at a facility covered by one permit shall be made to the Director.

(c)(1) An application for a permit a Coal Combustion Residue (CCR) unit shall contain the information required in Sections R315-319-60 through 107. No information need be submitted for which the effective date in Sections R315-319-60 through 107 has not been reached at the time of application submittal.

(2) All information required in Sections R315-319-60 through 107 with an effective date that falls later that the application submittal required in Subsection R315-319-1(c)(1) shall be submitted within six months of the effective date of the requirement found in Sections R315-319-60 through 107.

(d) Permit application procedures shall follow the requirements of Sections R315-310-1 and 2.

(e) Permit transfers shall follow the procedures of Section R315-310-11.

(f) Permit applicants shall follow the notification requirements of Subsection R315-310-3(2).

(g) Permit approvals shall follow the requirements of Rule R315-311.

(h) The Director approvals required in Sections R315-319-60 through 107 are satisfied by the issuance of a permit by the Director.

R315-319-2. Relation to Federal Coal Combustion Residuals Rule in 40 CFR 257.

(a) The compliance dates in 40 CFR 257 Subpart D are not affected by the requirements in Rule R315-319 for director approval except as the extensions allowed by 40CFR 256.26 may be applied by the Director.

R315-319-50. Scope and Applicability.

(a) Rule R315-319 establishes criteria for purposes managing coal combustion residuals in Utah.

(b) Rule R315-319 applies, except as provided in Subsection R315-319-50(i), to owners and operators of new and existing CCR units as defined in Subsection R315-319-53(a)(15). Rule R315-319 applies to any practice that does not meet the definition of a beneficial use of coal combustion residuals.

(c) Rule R315-319 applies to inactive CCR surface impoundments that have not closed prior to the effective date of Rule R315-319.

(d) Rule R315-319 does not apply to coal combustion residual landfills that have ceased receiving coal combustion residuals prior to October 19, 2015.

(e) Rule R315-319 does not apply to electric utilities or independent power producers that have ceased producing electricity prior to October 19, 2015.

(f) Rule R315-319 does not apply to fly ash, bottom ash, boiler slag, and flue gas desulfurization materials, generated primarily from the combustion of fuels, including other fossil fuels, other than coal. Disposal of these solid wastes are covered by Rules R315-301 through 307.

(g) Rule R315-319 does not apply to practices that meet the definition of a beneficial use of coal combustion residuals.

(h) Rule R315-319 does not apply to coal combustion residual placement at active or abandoned underground or surface coal mines.

(i) Rule R315-319 does not apply to Class I or V solid waste landfills that receive coal combustion residuals.

R315-319-51. Effective Date.

The effective date of R315-319 will be based on the approval of the Waste Management and Radiation Control Board after publication in the Utah State Bulletin.

R315-319-52. Applicability of Other Regulations.

(a) Compliance with the requirements of Sections R315-319-50 through 107 does not affect the need for the owner or operator of a coal combustion residuals landfill, coal combustion residuals surface impoundment, or lateral expansion of a coal combustion residuals unit to comply with all other applicable federal, state, tribal, or local laws or other requirements.

(b) Any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit continues to be subject to the requirements in Section R315-302-2.

R315-319-53. Definitions.

(a) The following definitions apply to Rule R315-319. Terms not defined in Section R315-319-53 have the meaning given In R315-301.

(1) "Acre foot" means the volume of one acre of surface area to a depth of one foot.

(2) "Active facility or active electric utilities or independent power producers" means any facility subject to the requirements of

Sections R315-319-50 through 107 that is in operation on October 14, 2015. An electric utility or independent power producer is in operation if it is generating electricity that is provided to electric power transmission systems or to electric power distribution systems on or after October 14, 2015. An off-site disposal facility is in operation if it is accepting or managing CCR on or after October 14, 2015.

(3) "Active life or in operation" means the period of operation beginning with the initial placement of CCR in the CCR unit and ending at completion of closure activities in accordance with Section R315-319-102.

(4) "Active portion" means that part of the CCR unit that has received or is receiving CCR or non-CCR waste and that has not completed closure in accordance with Section R315-319-102.

(5) "Aquifer" means a geologic formation, group of formations, or portion of a formation capable of yielding usable quantities of groundwater to wells or springs.

(6) "Area-capacity curves" means graphic curves which readily show the reservoir water surface area, in acres, at different elevations from the bottom of the reservoir to the maximum water surface, and the capacity or volume, in acre-feet, of the water contained in the reservoir at various elevations.

(7) "Areas susceptible to mass movement means those areas of influence, i.e., areas characterized as having an active or substantial possibility of mass movement, where, because of natural or human-induced events, the movement of earthen material at, beneath, or adjacent to the CCR unit results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.

(8) "Beneficial use of CCR" means the CCR meet all of the following conditions:

(i) The CCR shall provide a functional benefit;

(ii) The CCR shall substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;

(iii) The use of the CCR shall meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and

(iv) When unencapsulated use of CCR involves placement on the land of 12,400 tons or more in non-roadway applications, the user shall demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use in accordance with R315-101.

(9) "Closed" means placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with Subsection R315-319-102 and has initiated post-closure care in accordance with Subsection R315-319-104.

(10) "Coal combustion residuals (CCR)" means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.

(11) "CCR fugitive dust" means solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney.

(12) "CCR landfill or landfill" means an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of Rule R315-319, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.

(13) "CCR pile or pile" means any non-containerized accumulation of solid, non-flowing CCR that is placed on the land. CCR that is beneficially used off-site is not a CCR pile.

(14) "CCR surface impoundment or impoundment" means a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.

(15) "CCR unit" means any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified.

(16) "Dike" means an embankment, berm, or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

(17) "Displacement" means the relative movement of any two sides of a fault measured in any direction.

(18) "Disposal" is defined in 19-6-102(7); disposal does not include the storage or the beneficial use of CCR.

(19) "Downstream toe" means the junction of the downstream slope or face of the CCR surface impoundment with the ground surface.

(20) "Encapsulated beneficial use" means a beneficial use of CCR that binds the CCR into a solid matrix that minimizes its mobilization into the surrounding environment.

(21) "Existing CCR landfill" means a CCR landfill that receives CCR both before and after October 14, 2015, or for which construction commenced prior to October 14, 2015 and receives CCR on or after October 14, 2015. A CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun prior to October 14, 2015.

(22) "Existing CCR surface impoundment" means a CCR surface impoundment that receives CCR both before and after October 14, 2015, or for which construction commenced prior to October 14, 2015 and receives CCR on or after October 14, 2015. A CCR surface impoundment has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary

to begin physical construction and a continuous on-site, physical construction program had begun prior to October 14, 2015.

(23) "Facility" means all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, disposing, or otherwise conducting solid waste management of CCR. A facility may consist of several treatment, storage, or disposal operational units, e.g., one or more landfills, surface impoundments, or combinations of them.

(24) "Factor of safety, Safety factor," means the ratio of the forces tending to resist the failure of a structure to the forces tending to cause such failure as determined by accepted engineering practice.

(25) "Fault" means a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

(26) "Flood hydrograph" means a graph showing, for a given point on a stream, the discharge, height, or other characteristic of a flood as a function of time.

(27) "Freeboard" means the vertical distance between the lowest point on the crest of the impoundment dike and the surface of the waste contained therein.

(28) "Free liquids" means liquids that readily separate from the solid portion of a waste under ambient temperature and pressure.

(29) "Groundwater" means water below the land surface in a zone of saturation.

(30) "Hazard potential classification" means the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked CCR surface impoundment or mis-operation of the diked CCR surface impoundment or its appurtenances. The hazardous potential classifications include high hazard potential CCR surface impoundment, significant hazard potential CCR surface impoundment, and low hazard potential CCR surface impoundment, which terms mean:

(i) High hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.

(ii) Low hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner's property.

(iii) Significant hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

(31) "Height" means the vertical measurement from the downstream toe of the CCR surface impoundment at its lowest point to the lowest elevation of the crest of the CCR surface impoundment.

(32) "Holocene" means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch, at 11,700 years before present, to present.

(33) "Hydraulic conductivity" means the rate at which water can move through a permeable medium, i.e., the coefficient of permeability.

(34) "Inactive CCR surface impoundment" means a CCR surface impoundment that no longer receives CCR on or after October 14, 2015 and still contains both CCR and liquids on or after October 14, 2015.

(35) "Incised CCR surface impoundment" means a CCR surface impoundment which is constructed by excavating entirely below the natural ground surface, holds an accumulation of CCR entirely below the adjacent natural ground surface, and does not consist of any constructed diked portion.

(36) "Inflow design flood" means the flood hydrograph that is used in the design or modification of the CCR surface impoundments and its appurtenant works.

(37) "In operation" means the same as active life.

(38) "Karst terrain" means an area where karst topography, with its characteristic erosional surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, dolines, collapse shafts (sinkholes), sinking streams, caves, seeps, large springs, and blind valleys.

(39) "Lateral expansion" means a horizontal expansion of the waste boundaries of an existing CCR landfill or existing CCR surface impoundment made after October 14, 2015.

(40) "Liquefaction factor of safety" means the factor of safety, safety factor, determined using analysis under liquefaction conditions.

(41) "Lithified earth material" means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface.

(42) "Maximum horizontal acceleration in lithified earth material" means the maximum expected horizontal acceleration at the ground surface as depicted on a seismic hazard map, with a 98% or greater probability that the acceleration will not be exceeded in 50 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

(43) New CCR landfill means a CCR landfill or lateral expansion of a CCR landfill that first receives CCR or commences construction after October 14, 2015. A new CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun after October 14, 2015. Overfills are also considered new CCR landfills.

(44) "New CCR surface impoundment" means a CCR surface impoundment or lateral expansion of an existing or new CCR surface impoundment that first receives CCR or commences construction after October 14, 2015. A new CCR surface impoundment has

commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun after October 14, 2015.

(45) "Operator" means the person(s) responsible for the overall operation of a CCR unit.

(46) "Overfill" means a new CCR landfill constructed over a closed CCR surface impoundment.

(47) "Owner" means the person(s) who owns a CCR unit or part of a CCR unit.

(48) "Poor foundation conditions" mean those areas where features exist which indicate that a natural or human-induced event may result in inadequate foundation support for the structural components of an existing or new CCR unit. For example, failure to maintain static and seismic factors of safety as required in Subsections R315-319-73(e) and 74(e) would cause a poor foundation condition.

(49) "Probable maximum flood" means the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the drainage basin.

(50) "Qualified person" means a person or persons trained to recognize specific appearances of structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit by visual observation and, if applicable, to monitor instrumentation.

(51) "Qualified professional engineer" means an individual who is licensed by Utah as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the specific technical certifications required under Sections R315-319-50 through 107.

(52) "Recognized and generally accepted good engineering practices" means engineering maintenance or operation activities based on established codes, widely accepted standards, published technical reports, or a practice widely recommended throughout the industry. Such practices generally detail approved ways to perform specific engineering, inspection, or mechanical integrity activities.

(53) "Retrofit" means to remove all CCR and contaminated soils and sediments from the CCR surface impoundment, and to ensure the unit complies with the requirements in Section R315-319-72

(54) "Representative sample" means a sample of a universe or whole, e.g., waste pile, lagoon, and groundwater, which can be expected to exhibit the average properties of the universe or whole. See EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Chapter 9, available at http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm, for a discussion and examples of representative samples.

(55) "Run-off" means any rainwater, leachate, or other liquid that drains over land from any part of a CCR landfill or lateral expansion of a CCR landfill.

(56) "Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a CCR landfill or lateral expansion of a CCR landfill.

(57) "Sand and gravel pit or quarry" means an excavation for the extraction of aggregate, minerals or metals. The term sand and gravel pit and/or quarry does not include subsurface or surface coal mines.

(58) "Seismic factor of safety" means the factor of safety (safety factor) determined using analysis under earthquake conditions using the peak ground acceleration for a seismic event with a 2% probability of exceedance in 50 years, equivalent to a return period of approximately 2,500 years, based on the U.S. Geological Survey (USGS) seismic hazard maps for seismic events with this return period for the region where the CCR surface impoundment is located.

(59) "Seismic impact zone" means an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 50 years.

(60) "Slope protection" means engineered or non-engineered measures installed on the upstream or downstream slope of the CCR surface impoundment to protect the slope against wave action or erosion, including but not limited to rock riprap, wooden pile, or concrete revetments, vegetated wave berms, concrete facing, gabions, geotextiles, or fascines.

(61) "Solid waste management or management" means the systematic administration of the activities which provide for the collection, source separation, storage, transportation, processing, treatment, or disposal of solid waste.

(62) State means the State of Utah unless otherwise indicated.

(63) State Director or Director means the director of the Division of Waste Management and Radiation Control.

(64) "Static factor of safety" means the factor of safety, safety factor, determined using analysis under the long-term, maximum storage pool loading condition, the maximum surcharge pool loading condition, and under the end-of-construction loading condition.

(65) "Structural components" mean liners, leachate collection and removal systems, final covers, run-on and run-off systems, inflow design flood control systems, and any other component used in the construction and operation of the CCR unit that is necessary to ensure the integrity of the unit and that the contents of the unit are not released into the environment.

(66) "Unstable area means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity, including structural components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains.

(67) "Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the aquifer rises during the wet season.

(68) "Waste boundary" means a vertical surface located at the hydraulically downgradient limit of the CCR unit. The vertical surface extends down into the uppermost aquifer.

R315-319-60. Location Restrictions.

Placement above the uppermost aquifer.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units shall be constructed with a base that is located no less than 1.52 meters, five feet, above the upper limit of the uppermost aquifer, or shall demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations, including the seasonal high water table. The owner or operator shall demonstrate by the dates specified in Subsection R315-319-60(c) that the CCR unit meets the minimum requirements for placement above the uppermost aquifer.

(b) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of Subsection R315-319-60(a).

(c) The owner or operator of the CCR unit shall complete the demonstration required by Subsection R315-319-60(a) by the date specified in either Subsection R315-319-60(c)(1) or (2).

(1) For an existing CCR surface impoundment, the owner or operator shall complete the demonstration no later than October 17, 2018.

(2) For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator shall complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

(3) The owner or operator has completed the demonstration required by Subsection R315-319-60(a) when the demonstration has been submitted to and has received approval from the Director and is placed in the facility's operating record as required by Subsection R315-319-105(e).

(4) An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of Subsection R315-319-60(a) by the date specified in Subsection R315-319-60(c)(1) is subject to the requirements of Subsection R315-319-101(b)(1).

(5) An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of Subsection R315-319-60(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(e), the notification requirements specified in Subsection R315-319-106(e), and the internet requirements specified in Subsection R315-319-107(e).

R315-319-61. Wetlands.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units shall not be located in wetlands, as defined in Section R315-301-2, unless the owner or operator demonstrates by the dates specified in Rule R315-319 (c) that the CCR unit meets the requirements of Subsections R315-319-61(a)(1) through (5).

(1) Where applicable under section 404 of the Clean Water Act or applicable Utah wetlands laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve wetlands.

(2) The construction and operation of the CCR unit will not cause or contribute to any of the following:

(i) A violation of any applicable Utah or federal water quality standard;

(ii) A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act; and

(iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973.

(3) The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:

(i) Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the CCR unit;

(ii) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;

(iii) The volume and chemical nature of the CCR;

(iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;

(v) The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and

(vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

(4) To the extent required under section 404 of the Clean Water Act or applicable state wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands, as defined by acreage and function, by first avoiding impacts to wetlands to the maximum extent reasonable as required by Subsections R315-319-61(a)(1) through (3), then minimizing unavoidable impacts to the maximum extent reasonable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and reasonable compensatory mitigation actions, e.g., restoration of existing degraded wetlands or creation of man-made wetlands; and

(5) Sufficient information is available to make a reasoned determination with respect to the demonstrations in Subsections R315-319-61(a)(1) through (4).

(b) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of Subsection R315-319-61(a).

(c) The owner or operator of the CCR unit shall complete the demonstrations required by Subsection R315-319-61(a) by the date specified in either Subsection R315-319-61(c)(1) or (2).

(1) For an existing CCR surface impoundment, the owner or operator shall complete the demonstration no later than October 17, 2018.

(2) For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator shall complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

(3) The owner or operator has completed the demonstration required by Subsection R315-319-61(a) when the demonstration has been submitted to and has received approval from the Director and the demonstration is placed in the facility's operating record as required by Subsection R315-319-105(e).

(4) An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of Subsection R315-319-61(a) by the date specified in Subsection R315-319-61(c)(1) is subject to the requirements of Subsection R315-319-101(b)(1).

(5) An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstrations showing compliance with the requirements of Subsection R315-319-61(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator shall comply with the recordkeeping requirements specified in Subsection R315-319-105(e), the notification requirements specified in Subsection R315-319-106(e), and the Internet requirements specified in Subsection R315-319-107(e).

R315-319-62. Fault Areas.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units shall not be located within 60 meters, 200 feet, of the outermost damage zone of a fault that has had displacement in Holocene time unless the owner or operator demonstrates by the dates specified in Subsection R315-319-62(c) that an alternative setback distance of less than 60 meters, 200 feet, will prevent damage to the structural integrity of the CCR unit.

(b) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of Subsection R315-319-62(a).

(c) The owner or operator of the CCR unit shall complete the demonstration required by Subsection R315-319-62(a) by the date specified in either Subsection R315-319-62(c)(1) or (2).

(1) For an existing CCR surface impoundment, the owner or operator shall complete the demonstration no later than October 17, 2018.

(2) For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator shall complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

(3) The owner or operator has completed the demonstration required by Subsection R315-319-62(a) when the demonstration has been submitted to and has received approval from the Director and the demonstration is placed in the facility's operating record as required by Subsection R315-319-105(e).

(4) An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of Subsection R315-319-62(a) by the date specified in Subsection R315-319-62(c)(1) is subject to the requirements of Subsection R315-319-101(b)(1).

(5) An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of Subsection R315-319-62 (a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(e), the notification requirements specified in Subsection R315-319-106(e), and the Internet requirements specified in Subsection R315-319-107(e).

R315-319-63. Seismic Impact Zones.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units shall not be located in seismic impact zones unless the owner or operator demonstrates by the dates specified in Subsection R315-319-63(c) that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

(b) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of Subsection R315-319-63(a).

(c) The owner or operator of the CCR unit shall complete the demonstration required by Subsection R315-319-63(a) by the date specified in either Subsection R315-319-63(c)(1) or (2).

(1) For an existing CCR surface impoundment, the owner or operator shall complete the demonstration no later than October 17, 2018.

(2) For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator shall complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

(3) The owner or operator has completed the demonstration required by Subsection R315-319-63(a) when the demonstration has been submitted to and has received approval from the Director and the demonstration is placed in the facility's operating record as required by Subsection R315-319-105(e).

(4) An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of Subsection R315-319-63(a) by the date specified in Subsection R315-319-63(c)(1) is subject to the requirements of Subsection R315-319-101(b)(1).

(5) An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of Subsection R315-319-63(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(e), the notification requirements specified in Subsection R315-319-106(e), and the Internet requirements specified in Subsection R315-319-107(e).

R315-319-64. Unstable Areas.

(a) An existing or new CCR landfill, existing or new CCR surface impoundment, or any lateral expansion of a CCR unit shall not be located in an unstable area unless the owner or operator demonstrates by the dates specified in Subsection R315-319-64(d) that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted.

(b) The owner or operator shall consider all of the following factors, at a minimum, when determining whether an area is unstable:

(1) On-site or local soil conditions that may result in significant differential settling;

(2) On-site or local geologic or geomorphologic features; and

(3) On-site or local human-made features or events, both surface and subsurface.

(c) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of Subsection R315-319-64(a).

(d) The owner or operator of the CCR unit shall complete the demonstration required by Subsection R315-319-64(a) by the date specified in either Subsection R315-319-64(d)(1) or (2).

(1) For an existing CCR landfill or existing CCR surface impoundment, the owner or operator shall complete the demonstration no later than October 17, 2018.

(2) For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator shall complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

(3) The owner or operator has completed the demonstration required by Subsection R315-319-64(a) when the demonstration has been submitted to and has received approval from the Director and the demonstration is placed in the facility's operating record as required by Subsection R315-319-105(e).

(4) An owner or operator of an existing CCR surface impoundment or existing CCR landfill who fails to demonstrate compliance with the requirements of Subsection R315-319-64(a) by the date specified in Subsection R315-319-64(d)(1) is subject to the requirements of Subsection R315-319-101(b)(1) or (d)(1), respectively.

(5) An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of Subsection R315-319-64(a) is prohibited from placing CCR in the CCR unit.

(e) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(e), the notification requirements specified in Subsection R315-319-106(e), and the Internet requirements specified in Subsection R315-319-107(e).

R315-319-70. Design Criteria for New CCR Landfills and Any Lateral Expansion of a CCR Landfill.

(a)(1) New CCR landfills and any lateral expansion of a CCR landfill shall be designed, constructed, operated, and maintained with either a composite liner that meets the requirements of Subsection R315-319-70(b) or an alternative composite liner that meets the requirements in Subsection R315-319-70(c), and a leachate collection and removal system that meets the requirements of Subsection R315-319-70(d).

(2) Prior to construction of an overfill the underlying surface impoundment shall meet the requirements of Subsection R315-319-102(d).

(b) A composite liner shall consist of two components; the upper component consisting of, at a minimum, a 30-mil geomembrane liner (GM), and the lower component consisting of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1 x 10-7 centimeters per second (cm/sec). GM components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The GM or upper liner component shall be installed in direct and uniform contact with the compacted soil or lower liner component. The composite liner shall be:

(1) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients, including static head and external hydrogeologic forces, physical contact with the CCR or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(2) Constructed of materials that provide appropriate shear resistance of the upper and lower component interface to prevent sliding of the upper component including on slopes;

(3) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(4) Installed to cover all surrounding earth likely to be in contact with the CCR or leachate.

(c) If the owner or operator elects to install an alternative composite liner, all of the following requirements shall be met:

(1) An alternative composite liner shall consist of two components; the upper component consisting of, at a minimum, a 30-mil GM, and a lower component, that is not a geomembrane, with a liquid flow rate no greater than the liquid flow rate of two feet of compacted soil with a hydraulic conductivity of no more than 1 x 10-7 cm/sec. GM components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. If the lower component of the alternative liner is compacted soil, the GM shall be installed in direct

and uniform contact with the compacted soil.

(2) The owner or operator shall obtain certification from a qualified professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow rate through two feet of compacted soil with a hydraulic conductivity of 1 x 10-7 cm/sec. The hydraulic conductivity for the two feet of compacted soil used in the comparison shall be no greater than 1 x 10-7 cm/sec. The hydraulic conductivity of any alternative to the two feet of compacted soil shall be determined using recognized and generally accepted methods. The liquid flow rate comparison shall be made using Equation 1 of Section R315-319-70, which is derived from Darcy's Law for gravity flow through porous media.

Equation 1

$Q/A=q=k(h/t+1)$

Where,

Q = flow rate, cubic centimeters/second;

A = surface area of the liner, squared centimeters;

q = flow rate per unit area, cubic centimeters/second/squared centimeter;

k = hydraulic conductivity of the liner, centimeters/second;

h = hydraulic head above the liner, centimeters; and

t = thickness of the liner, centimeters.

(3) The alternative composite liner shall meet the requirements specified in Subsections R315-319-70(b)(1) through (4).

(d) The leachate collection and removal system shall be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and post-closure care period. The leachate collection and removal system shall be:

(1) Designed and operated to maintain less than a 30-centimeter depth of leachate over the composite liner or alternative composite liner;

(2) Constructed of materials that are chemically resistant to the CCR and any non-CCR waste managed in the CCR unit and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying waste, waste cover materials, and equipment used at the CCR unit; and

(3) Designed and operated to minimize clogging during the active life and post-closure care period.

(e) Prior to construction of the CCR landfill or any lateral expansion of a CCR landfill, the owner or operator shall obtain a certification from a qualified professional engineer that the design of the composite liner; or, if applicable, alternative composite liner; and the leachate collection and removal system meets the requirements of Section R315-319-70.

(f) Upon completion of construction of the CCR landfill or any lateral expansion of a CCR landfill, the owner or operator shall obtain a certification from a qualified professional engineer that the composite liner; or, if applicable, alternative composite liner; and the leachate collection and removal system has been constructed in accordance with the requirements of Section R315-319-70.

(g) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(f), the notification requirements specified in Subsection R315-319-106(f), and the Internet requirements specified in Subsection R315-319-107(f).

R315-319-71. Liner Design Criteria for Existing CCR Surface Impoundments.

(a)(1) No later than October 17, 2016, the owner or operator of an existing CCR surface impoundment shall document whether or not such unit was constructed with any one of the following:

(i) A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than 1 x 10-7 cm/sec;

(ii) A composite liner that meets the requirements of Subsection R315-319-70(b); or

(iii) An alternative composite liner that meets the requirements of Subsection R315-319-70(c).

(2) The hydraulic conductivity of the compacted soil shall be determined using recognized and generally accepted methods.

(3) An existing CCR surface impoundment is considered to be an existing unlined CCR surface impoundment if either:

(i) The owner or operator of the CCR unit determines that the CCR unit is not constructed with a liner that meets the requirements of Subsection R315-319-71(a)(1)(i), (ii), or (iii); or

(ii) The owner or operator of the CCR unit fails to document whether the CCR unit was constructed with a liner that meets the requirements of Subsection R315-319-71 (a)(1)(i), (ii), or (iii).

(4) All existing unlined CCR surface impoundments are subject to the requirements of Subsection R315-319-101(a).

(b) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer attesting that the documentation as to whether a CCR unit meets the requirements of Subsection R315-319-71(a) is accurate.

(c) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(f), the notification requirements specified in Subsection R315-319-106(f), and the Internet requirements specified in Subsection R315-319-107(f).

R315-319-72. Liner Design Criteria for New CCR Surface Impoundments and Any Lateral Expansion of a CCR Surface Impoundment.

(a) New CCR surface impoundments and lateral expansions of existing and new CCR surface impoundments shall be designed, constructed, operated, and maintained with either a composite liner or an alternative composite liner that meets the requirements of Subsection R315-319-70(b) or (c).

(b) Any liner specified in Section R315-319-72 shall be installed to cover all surrounding earth likely to be in contact with CCR.

Dikes shall not be constructed on top of the composite liner.

(c) Prior to construction of the CCR surface impoundment or any lateral expansion of a CCR surface impoundment, the owner or operator shall obtain certification from a qualified professional engineer that the design of the composite liner or, if applicable, the design of an alternative composite liner complies with the requirements of Section R315-319-72.

(d) Upon completion, the owner or operator shall obtain certification from a qualified professional engineer that the composite liner or if applicable, the alternative composite liner has been constructed in accordance with the requirements of Section R315-319-72.

(e) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(f), the notification requirements specified in Subsection R315-319-106(f), and the Internet requirements specified in Subsection R315-319-107(f).

R315-319-73. Structural Integrity Criteria for Existing CCR Surface Impoundments.

(a) The requirements of Subsections R315-319-73(a)(1) through (4) apply to all existing CCR surface impoundments, except for those existing CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified, e.g., a dike is constructed, such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of Subsections R315-319-73(a)(1) through (4).

(1) No later than, December 17, 2015, the owner or operator of the CCR unit shall place on or immediately adjacent to the CCR unit a permanent identification marker, at least six feet high showing the identification number of the CCR unit, if one has been assigned by the state, the name associated with the CCR unit and the name of the owner or operator of the CCR unit.

(2) Periodic hazard potential classification assessments.

(i) The owner or operator of the CCR unit shall conduct initial and periodic hazard potential classification assessments of the CCR unit according to the timeframes specified in Subsection R315-319-73(f). The owner or operator shall document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The owner or operator shall also document the basis for each hazard potential classification.

(ii) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in Subsection R315-319-73(a)(2)(i) was conducted in accordance with the requirements of Section R315-319-73.

(3) Emergency Action Plan (EAP)

(i) Development of the plan. No later than April 17, 2017, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under Subsection R315-319-73(a)(2) shall prepare and maintain a written EAP. At a minimum, the EAP shall:

(A) Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

(B) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(C) Provide contact information of emergency responders;

(D) Include a map which delineates the downstream area which would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

(E) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

(ii) Amendment of the plan.

(A) The owner or operator of a CCR unit subject to the requirements of Subsection R315-319-73(a)(3)(i) may amend the written EAP at any time provided the revised plan is has been submitted to and has received approval from the Director and placed in the facility's operating record as required by Subsection R315-319-105(f)(6). The owner or operator shall amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

(B) The written EAP shall be evaluated, at a minimum, every five years to ensure the information required in Subsection R315-319-73(a)(3)(i) is accurate. As necessary, the EAP shall be updated and a revised EAP has been submitted to and has received approval from the Director and placed in the facility's operating record as required by Subsection R315-319-105(f)(6).

(iii) Changes in hazard potential classification.

(A) If the owner or operator of a CCR unit determines during a periodic hazard potential assessment that the CCR unit is no longer classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit is no longer subject to the requirement to prepare and maintain a written EAP beginning on the date the periodic hazard potential assessment documentation is has been submitted to and has received approval from the Director and placed in the facility's operating record as required by Subsection R315-319-105(f)(5).

(B) If the owner or operator of a CCR unit classified as a low hazard potential CCR surface impoundment subsequently determines that the CCR unit is properly re-classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit shall prepare a written EAP for the CCR unit as required by Subsection R315-319-73(a)(3)(i) within six months of completing such periodic hazard potential assessment and submit the EAP to the Director for approval.

(iv) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the

written EAP, and any subsequent amendment of the EAP, meets the requirements of Subsection R315-319-73(a)(3) and submit the certification to the Director.

(v) Activation of the EAP. The EAP shall be implemented once events or circumstances involving the CCR unit that represent a safety emergency are detected, including conditions identified during periodic structural stability assessments, annual inspections, and inspections by a qualified person.

(4) The CCR unit and surrounding areas shall be designed, constructed, operated, and maintained with vegetated slopes of dikes except for slopes which are protected with an alternate form(s) of slope protection.

(b) The requirements of Subsections R315-319-73(c) through (e) apply to an owner or operator of an existing CCR surface impoundment that either:

(1) Has a height of five feet or more and a storage volume of 20 acre-feet or more; or

(2) Has a height of 20 feet or more.

(c)(1) No later than October 17, 2016, the owner or operator of the CCR unit shall compile and submit to the Director a history of construction, which shall contain, to the extent feasible, the information specified in Subsections R315-319-73(c)(1)(i) through (xi).

(i) The name and address of the person(s) owning or operating the CCR unit; the name associated with the CCR unit; and the identification number of the CCR unit if one has been assigned by the state.

(ii) The location of the CCR unit identified on the most recent U.S. Geological Survey (USGS) 71/2 minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.

(iii) A statement of the purpose for which the CCR unit is being used.

(iv) The name and size in acres of the watershed within which the CCR unit is located.

(v) A description of the physical and engineering properties of the foundation and abutment materials on which the CCR unit is constructed.

(vi) A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the CCR unit; the method of site preparation and construction of each zone of the CCR unit; and the approximate dates of construction of each successive stage of construction of the CCR unit.

(vii) At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR unit, detailed dimensional drawings of the CCR unit, including a plan view and cross sections of the length and width of the CCR unit, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the normal operating pool surface elevation and the maximum pool surface elevation following peak discharge from the inflow design flood, the expected maximum depth of CCR within the CCR surface impoundment, and any identifiable natural or manmade features that could adversely affect operation of the CCR unit due to malfunction or mis-operation.

(viii) A description of the type, purpose, and location of existing instrumentation.

(ix) Area-capacity curves for the CCR unit.

(x) A description of each spillway and diversion design features and capacities and calculations used in their determination.

(xi) The construction specifications and provisions for surveillance, maintenance, and repair of the CCR unit.

(xii) Any record or knowledge of structural instability of the CCR unit.

(2) Changes to the history of construction. If there is a significant change to any information compiled under Subsection R315-319-73(c)(1), the owner or operator of the CCR unit shall update the relevant information, submit it to the Director, and place it in the facility's operating record as required by Subsection R315-319-105(f)(9).

(d) Periodic structural stability assessments.

(1) The owner or operator of the CCR unit shall conduct initial and periodic structural stability assessments and document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. The assessment shall, at a minimum, document whether the CCR unit has been designed, constructed, operated, and maintained with:

(i) Stable foundations and abutments;

(ii) Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;

(iii) Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;

(iv) Vegetated slopes of dikes and surrounding areas except for slopes which have an alternate form or forms of slope protection;

(v) A single spillway or a combination of spillways configured as specified in Subsection R315-319-73(d)(1)(v)(A). The combined capacity of all spillways shall be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from the event specified in Subsection R315-319-73(d)(1)(v)(B).

(A) All spillways shall be either:

(I) Of non-erodible construction and designed to carry sustained flows; or

(II) Earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

(B) The combined capacity of all spillways shall adequately manage flow during and following the peak discharge from a:

(I) Probable maximum flood (PMF) for a high hazard potential CCR surface impoundment; or

(II) 1000-year flood for a significant hazard potential CCR surface impoundment; or

(III) 100-year flood for a low hazard potential CCR surface impoundment.

(vi) Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit that maintain structural integrity and are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may

negatively affect the operation of the hydraulic structure; and

(vii) For CCR units with downstream slopes which can be inundated by the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.

(2) The periodic assessment described in Subsection R315-319-73(d)(1) shall identify any structural stability deficiencies associated with the CCR unit in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the owner or operator unit shall remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken and submit the documentation to the Director.

(3) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment was conducted in accordance with the requirements of Section R315-319-73 and submit the certification to the Director.

(e) Periodic safety factor assessments.

(1) The owner or operator shall conduct and submit to the Director an initial and periodic safety factor assessments for each CCR unit and document whether the calculated factors of safety for each CCR unit achieve the minimum safety factors specified in Subsections R315-319-73(e)(1)(i) through (iv) for the critical cross section of the embankment. The critical cross section is the cross section anticipated to be the most susceptible of all cross sections to structural failure based on appropriate engineering considerations, including loading conditions. The safety factor assessments shall be supported by appropriate engineering calculations.

(i) The calculated static factor of safety under the long-term, maximum storage pool loading condition shall equal or exceed 1.50.

(ii) The calculated static factor of safety under the maximum surcharge pool loading condition shall equal or exceed 1.40.

(iii) The calculated seismic factor of safety shall equal or exceed 1.00.

(iv) For dikes constructed of soils that have susceptibility to liquefaction, the calculated liquefaction factor of safety shall equal or exceed 1.20.

(2) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment specified in Subsection R315-319-73(e)(1) meets the requirements of Section R315-319-73.

(f) Timeframes for periodic assessments

(1) Initial assessments. Except as provided by Subsection R315-319-73(f)(2), the owner or operator of the CCR unit shall complete the initial assessments required by Subsections R315-319-73(a)(2), (d), and (e) no later than October 17, 2016. The owner or operator has completed an initial assessment when the owner or operator has and submit to the Director and placed the assessment required by Subsections R315-319-73(a)(2), (d), and (e) in the facility's operating record as required by Subsections R315-319-105(f)(5), (10), and (12).

(2) Use of a previously completed assessment(s) in lieu of the initial assessment(s). The owner or operator of the CCR unit may elect to use a previously completed assessment to serve as the initial assessment required by Subsections R315-319-73(a)(2), (d), and (e) provided that the previously completed assessment(s):

(i) Was completed no earlier than 42 months prior to October 17, 2016; and

(ii) Meets the applicable requirements of Subsections R315-319-73 (a)(2), (d), and (e).

(3) Frequency for conducting periodic assessments. The owner or operator of the CCR unit shall conduct and complete and submit to the Director the assessments required by Subsections R315-319-73 (a)(2), (d), and (e) every five years. The date of completing the initial assessment is the basis for establishing the deadline to complete the first subsequent assessment. If the owner or operator elects to use a previously completed assessment(s) in lieu of the initial assessment as provided by Subsection R315-319-73 (f)(2), the date of the report for the previously completed assessment is the basis for establishing the deadline to complete the first subsequent assessment. The owner or operator may complete any required assessment prior to the required deadline provided the owner or operator submits the assessment to the Director and places the completed assessment(s) into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent assessments is based on the date of completing the previous assessment. For purposes of Subsection R315-319-73(f)(3), the owner or operator has completed an assessment when the relevant assessment(s) required by Subsections R315-319-73 (a)(2), (d), and (e) has been submitted and approved by the Director and has been placed in the facility's operating record as required by Subsections R315-319-105(f)(5), (10), and (12).

(4) Closure of the CCR unit. An owner or operator of a CCR unit who either fails to complete a timely safety factor assessment or fails to demonstrate minimum safety factors as required by Subsection R315-319-73 (e) is subject to the requirements of Subsection R315-319-101(b)(2).

(g) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(f), the notification requirements specified in Subsection R315-319-106(f), and the internet requirements specified in Subsection R315-319-107(f).

R315-319-74. Structural Integrity Criteria for New CCR Surface Impoundments and Any Lateral Expansion of a CCR Surface Impoundment.

(a) The requirements of Subsections R315-319-74(a)(1) through (4) apply to all new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, except for those new CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified, e.g., a dike is constructed, such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of Subsections R315-319-74(a)(1) through (4).

(1) No later than the initial receipt of CCR, the owner or operator of the CCR unit shall place on or immediately adjacent to the CCR unit a permanent identification marker, at least six feet high showing the identification number of the CCR unit, if one has been assigned by the state, the name associated with the CCR unit and the name of the owner or operator of the CCR unit.

(2) Periodic hazard potential classification assessments.

(i) The owner or operator of the CCR unit shall conduct initial and periodic hazard potential classification assessments of the CCR unit according to the timeframes specified in Subsection R315-319-74(f). The owner or operator shall document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The owner or operator shall also document the basis for each hazard potential classification.

(ii) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in Subsection R315-319-74(a)(2)(i) was conducted in accordance with the requirements of Section R315-319-74.

(3) Emergency Action Plan (EAP)

(i) Development of the plan. Prior to the initial receipt of CCR in the CCR unit, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under Subsection R315-319-74 (a)(2) shall prepare, and maintain a written EAP. At a minimum, the EAP shall:

(A) Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

(B) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(C) Provide contact information of emergency responders;

(D) Include a map which delineates the downstream area which would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

(E) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

(ii) Amendment of the plan.

(A) The owner or operator of a CCR unit subject to the requirements of Subsection R315-319-74(a)(3)(i) may amend the written EAP at any time provided the revised plan is placed in the facility's operating record as required by Subsection R315-319-105(f)(6). The owner or operator shall amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

(B) The written EAP shall be evaluated, at a minimum, every five years to ensure the information required in Subsection R315-319-74(a)(3)(i) is accurate. As necessary, the EAP shall be updated and a revised EAP placed in the facility's operating record as required by Subsection R315-319-105(f)(6).

(iii) Changes in hazard potential classification.

(A) If the owner or operator of a CCR unit determines during a periodic hazard potential assessment that the CCR unit is no longer classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit is no longer subject to the requirement to prepare and maintain a written EAP beginning on the date the periodic hazard potential assessment documentation has been submitted to and has received approval from the Director and placed in the facility's operating record as required by Subsection R315-319-105(f)(5).

(B) If the owner or operator of a CCR unit classified as a low hazard potential CCR surface impoundment subsequently determines that the CCR unit is properly re-classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit shall prepare and submit to the Director a written EAP for the CCR unit as required by Subsection R315-319-74(a)(3)(i) within six months of completing such periodic hazard potential assessment.

(iv) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the written EAP, and any subsequent amendment of the EAP, meets the requirements of Subsection R315-319-74(a)(3).

(v) Activation of the EAP. The EAP shall be implemented once events or circumstances involving the CCR unit that represent a safety emergency are detected, including conditions identified during periodic structural stability assessments, annual inspections, and inspections by a qualified person.

(4) The CCR unit and surrounding areas shall be designed, constructed, operated, and maintained with vegetated slopes of dikes except for slopes which are protected with an alternate form(s) of slope protection.

(b) The requirements of Subsections R315-319-74(c) through (e) apply to an owner or operator of a new CCR surface impoundment and any lateral expansion of a CCR surface impoundment that either:

(1) Has a height of five feet or more and a storage volume of 20 acre-feet or more; or

(2) Has a height of 20 feet or more.

(c)(1) No later than the initial receipt of CCR in the CCR unit, the owner or operator unit shall compile the design and construction plans for the CCR unit, which shall include, to the extent feasible, the information specified in Subsection R315-319-74 (c)(1)(i) through (xi).

(i) The name and address of the person(s) owning or operating the CCR unit; the name associated with the CCR unit; and the identification number of the CCR unit if one has been assigned by the state.

(ii) The location of the CCR unit identified on the most recent U.S. Geological Survey (USGS) 71/2 minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.

(iii) A statement of the purpose for which the CCR unit is being used.

(iv) The name and size in acres of the watershed within which the CCR unit is located.

(v) A description of the physical and engineering properties of the foundation and abutment materials on which the CCR unit is constructed.

(vi) A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the CCR unit; the method of site preparation and construction of each zone of the CCR unit; and the dates of construction of each successive stage of construction of the CCR unit.

(vii) At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR unit, detailed dimensional drawings of the CCR unit, including a plan view and cross sections of the length and width of the CCR unit, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the normal operating pool surface elevation and the maximum pool surface elevation following peak discharge from the inflow design flood, the expected maximum depth of CCR within the CCR surface impoundment, and any identifiable natural or manmade features that could adversely affect operation of the CCR unit due to malfunction or mis-operation.

(viii) A description of the type, purpose, and location of existing instrumentation.

(ix) Area-capacity curves for the CCR unit.

(x) A description of each spillway and diversion design features and capacities and calculations used in their determination.

(xi) The construction specifications and provisions for surveillance, maintenance, and repair of the CCR unit.

(xii) Any record or knowledge of structural instability of the CCR unit.

(2) Changes in the design and construction. If there is a significant change to any information compiled under Subsection R315-319-74 (c)(1), the owner or operator of the CCR unit shall update the relevant information and place it in the facility's operating record as required by Subsection R315-319-105(f)(13).

(d) Periodic structural stability assessments.

(1) The owner or operator of the CCR unit shall conduct initial and periodic structural stability assessments and document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. The assessment shall, at a minimum, document whether the CCR unit has been designed, constructed, operated, and maintained with:

(i) Stable foundations and abutments;

(ii) Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;

(iii) Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;

(iv) Vegetated slopes of dikes and surrounding areas except for slopes which have an alternate form or forms of slope protection;

(v) A single spillway or a combination of spillways configured as specified in Subsection R315-319-74(d)(1)(v)(A). The combined capacity of all spillways shall be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from the event specified in Subsection R315-319-74 (d)(1)(v)(B).

(A) All spillways shall be either:

(I) Of non-erodible construction and designed to carry sustained flows; or

(II) Earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

(B) The combined capacity of all spillways shall adequately manage flow during and following the peak discharge from a:

(I) Probable maximum flood (PMF) for a high hazard potential CCR surface impoundment; or

(II) 1000-year flood for a significant hazard potential CCR surface impoundment; or

(III) 100-year flood for a low hazard potential CCR surface impoundment.

(vi) Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit that maintain structural integrity and are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure; and

(vii) For CCR units with downstream slopes which can be inundated by the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.

(2) The periodic assessment described in Subsection R315-319-74(d)(1) shall identify any structural stability deficiencies associated with the CCR unit in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the owner or operator unit shall remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

(3) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment was conducted in accordance with the requirements of Section R315-319-74.

(e) Periodic safety factor assessments.

(1) The owner or operator shall conduct an initial and periodic safety factor assessments for each CCR unit and document whether the calculated factors of safety for each CCR unit achieve the minimum safety factors specified in Subsections R315-319-74(e)(1)(i) through (v) for the critical cross section of the embankment. The critical cross section is the cross section anticipated to be the most susceptible of all cross sections to structural failure based on appropriate engineering considerations, including loading conditions. The safety factor assessments shall be supported by appropriate engineering calculations.

(i) The calculated static factor of safety under the end-of-construction loading condition shall equal or exceed 1.30. The

assessment of this loading condition is only required for the initial safety factor assessment and is not required for subsequent assessments.

(ii) The calculated static factor of safety under the long-term, maximum storage pool loading condition shall equal or exceed 1.50.

(iii) The calculated static factor of safety under the maximum surcharge pool loading condition shall equal or exceed 1.40.

(iv) The calculated seismic factor of safety shall equal or exceed 1.00.

(v) For dikes constructed of soils that have susceptibility to liquefaction, the calculated liquefaction factor of safety shall equal or exceed 1.20.

(2) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment specified in Subsection R315-319-74(e)(1) meets the requirements of Section R315-319-74.

(f) Timeframes for periodic assessments

(1) Initial assessments. Except as provided by Subsection R315-319-74 (f)(2), the owner or operator of the CCR unit shall complete the initial assessments required by Subsections R315-319-74(a)(2), (d), and (e) prior to the initial receipt of CCR in the unit. The owner or operator has completed an initial assessment when the owner or operator has placed the assessment required by Subsections R315-319-74 (a)(2), (d), and (e) in the facility's operating record as required by Subsection R315-319-105(f)(5), (10), and (12).

(2) Frequency for conducting periodic assessments. The owner or operator of the CCR unit shall conduct, complete the assessments required by Subsections R315-319-74 (a)(2), (d), and (e) every five years. The date of completing the initial assessment is the basis for establishing the deadline to complete the first subsequent assessment. The owner or operator may complete any required assessment prior to the required deadline provided the owner or operator places the completed assessment(s) into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent assessments is based on the date of completing the previous assessment. For purposes of Subsection R315-319-74 (f)(2), the owner or operator has completed an assessment when the relevant assessment(s) required by Subsections R315-319-74 (a)(2), (d), and (e) has been placed in the facility's operating record as required by Subsection R315-319-105(f)(5), (10), and (12).

(3) Failure to document minimum safety factors during the initial assessment. Until the date an owner or operator of a CCR unit documents that the calculated factors of safety achieve the minimum safety factors specified in Subsections R315-319-74 (e)(1)(i) through (v), the owner or operator is prohibited from placing CCR in such unit.

(4) Closure of the CCR unit. An owner or operator of a CCR unit who either fails to complete a timely periodic safety factor assessment or fails to demonstrate minimum safety factors as required by Subsection R315-319-74 (e) is subject to the requirements of Subsection R315-319-101(c).

(g) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(f), the notification requirements specified in Subsection R315-319-106(f), and the internet requirements specified in Subsection R315-319-107(f).

R315-319-80. Operating Criteria - Air Criteria.

(a) The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit shall adopt measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads, and other CCR management and material handling activities.

(b) CCR fugitive dust control plan. The owner or operator of the CCR unit shall prepare and operate in accordance with a CCR fugitive dust control plan has been submitted to and has received approval from the Director and as specified in Subsections R315-319-80(b)(1) through (7). This requirement applies in addition to, not in place of, any applicable standards under the Occupational Safety and Health Act.

(1) The CCR fugitive dust control plan shall identify and describe the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the facility. The owner or operator shall select, and include in the CCR fugitive dust control plan, the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions. Examples of control measures that may be appropriate include: Locating CCR inside an enclosure or partial enclosure; operating a water spray or fogging system; reducing fall distances at material drop points; using wind barriers, compaction, or vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and sweeping roads; covering trucks transporting CCR; reducing or halting operations during high wind events; or applying a daily cover.

(2) If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill, the CCR fugitive dust control plan shall include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent.

(3) The CCR fugitive dust control plan shall include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility.

(4) The CCR fugitive dust control plan shall include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan.

(5) The owner or operator of a CCR unit shall prepare an initial CCR fugitive dust control plan for the facility no later than October 19, 2015, or by initial receipt of CCR in any CCR unit at the facility if the owner or operator becomes subject to Sections R315-319-50 through 107 after October 19, 2015. The owner or operator has completed the initial CCR fugitive dust control plan when the plan has been placed in the facility's operating record as required by Subsection R315-319-105(g)(1).

(6) Amendment of the plan. The owner or operator of a CCR unit subject to the requirements of Section R315-319-80 may

amend the written CCR fugitive dust control plan at any time provided the revised plan is placed in the facility's operating record as required by Subsection R315-319-105(g)(1). The owner or operator shall amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit.

(7) The owner or operator shall obtain a certification from a qualified professional engineer that the initial CCR fugitive dust control plan, or any subsequent amendment of it, meets the requirements of Section R315-319-80.

(c) Annual CCR fugitive dust control report. The owner or operator of a CCR unit shall prepare an annual CCR fugitive dust control report that includes a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken. The initial annual report shall be completed no later than 14 months after placing the initial CCR fugitive dust control plan in the facility's operating record. The deadline for completing a subsequent report is one year after the date of completing the previous report. For purposes of Subsection R315-319-80(c), the owner or operator has completed the annual CCR fugitive dust control report when the plan has been placed in the facility's operating record as required by Subsection R315-319-105(g)(2).

(d) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(g), the notification requirements specified in Subsection R315-319-106(g), and the internet requirements specified in Subsection R315-319-107(g).

R315-319-81. Operating Criteria Run-On and Run-Off Controls for CCR Landfills.

(a) The owner or operator of an existing or new CCR landfill or any lateral expansion of a CCR landfill shall design, construct, operate, and maintain:

(1) A run-on control system to prevent flow onto the active portion of the CCR unit during the peak discharge from a 24-hour, 25-year storm; and

(2) A run-off control system from the active portion of the CCR unit to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(b) Run-off from the active portion of the CCR unit shall be handled in accordance with the surface water requirements under Subsection R315-303-2(3).

(c) Run-on and run-off control system plan

(1) Content of the plan. The owner or operator shall prepare initial and periodic run-on and run-off control system plans for the CCR unit according to the timeframes specified in Subsections R315-319-81(c)(3) and (4). These plans shall document how the run-on and run-off control systems have been designed and constructed to meet the applicable requirements of Section R315-319-81. Each plan shall be supported by appropriate engineering calculations. The owner or operator has completed the initial run-on and run-off control system plan when the plan has been placed in the facility's operating record as required by Subsection R315-319-105(g)(3).

(2) Amendment of the plan. The owner or operator may amend the written run-on and run-off control system plan at any time provided the revised plan is placed in the facility's operating record as required by Subsection R315-319-105(g)(3). The owner or operator shall amend the written run-on and run-off control system plan whenever there is a change in conditions that would substantially affect the written plan in effect.

(3) Timeframes for preparing the initial plan

(i) Existing CCR landfills. The owner or operator of the CCR unit shall prepare the initial run-on and run-off control system plan no later than October 17, 2016.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator shall prepare the initial run-on and run-off control system plan no later than the date of initial receipt of CCR in the CCR unit.

(4) Frequency for revising the plan. The owner or operator of the CCR unit shall prepare periodic run-on and run-off control system plans required by Subsection R315-319-81(c)(1) every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first subsequent plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. For purposes of Subsection R315-319-81(c)(4), the owner or operator has completed a periodic run-on and run-off control system plan when the plan has been placed in the facility's operating record as required by Subsection R315-319-105(g)(3).

(5) The owner or operator shall obtain a certification from a qualified professional engineer stating that the initial and periodic run-on and run-off control system plans meet the requirements of Section R315-319-81.

(d) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(g), the notification requirements specified in Subsection R315-319-106(g), and the internet requirements specified in Subsection R315-319-107(g).

R315-319-82. Operating Criteria - Hydrologic and Hydraulic Capacity Requirements for CCR Surface Impoundments.

(a) The owner or operator of an existing or new CCR surface impoundment or any lateral expansion of a CCR surface impoundment shall design, construct, operate, and maintain an inflow design flood control system as specified in Subsections R315-319-82(a)(1) and (2).

(1) The inflow design flood control system shall adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood specified in Subsection R315-319-82(a)(3).

(2) The inflow design flood control system shall adequately manage flow from the CCR unit to collect and control the peak

discharge resulting from the inflow design flood specified in Subsection R315-319-82(a)(3).

(3) The inflow design flood is:

(i) For a high hazard potential CCR surface impoundment, as determined under Subsection R315-319-73(a)(2) or Subsection R315-319-74(a)(2), the probable maximum flood;

(ii) For a significant hazard potential CCR surface impoundment, as determined under Subsection R315-319-73(a)(2) or Subsection R315-319-74(a)(2), the 1,000-year flood;

(iii) For a low hazard potential CCR surface impoundment, as determined under Subsection R315-319-73(a)(2) or Subsection R315-319-74(a)(2), the 100-year flood; or

(iv) For an incised CCR surface impoundment, the 25-year flood.

(b) Discharge from the CCR unit shall be handled in accordance with the surface water requirements under Subsection R315-303-2(3).

(c) Inflow design flood control system plan

(1) Content of the plan. The owner or operator shall prepare initial and periodic inflow design flood control system plans for the CCR unit according to the timeframes specified in Subsections R315-319-82 (c)(3) and (4). These plans shall document how the inflow design flood control system has been designed and constructed to meet the requirements of Section R315-319-82. Each plan shall be supported by appropriate engineering calculations. The owner or operator of the CCR unit has completed the inflow design flood control system plan when the plan has been placed in the facility's operating record as required by Subsection R315-319-105(g)(4).

(2) Amendment of the plan. The owner or operator of the CCR unit may amend the written inflow design flood control system plan at any time provided the revised plan is placed in the facility's operating record as required by Subsection R315-319-105(g)(4). The owner or operator shall amend the written inflow design flood control system plan whenever there is a change in conditions that would substantially affect the written plan in effect.

(3) Timeframes for preparing the initial plan

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit shall prepare the initial inflow design flood control system plan no later than October 17, 2016.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator shall prepare the initial inflow design flood control system plan no later than the date of initial receipt of CCR in the CCR unit.

(4) Frequency for revising the plan. The owner or operator shall prepare periodic inflow design flood control system plans required by Subsection R315-319-82(c)(1) every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first periodic plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. For purposes of Subsection R315-319-82(c)(4), the owner or operator has completed an inflow design flood control system plan when the plan has been placed in the facility's operating record as required by Subsection R315-319-105(g)(4).

(5) The owner or operator shall obtain a certification from a qualified professional engineer stating that the initial and periodic inflow design flood control system plans meet the requirements of Section R315-319-82.

(d) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(g), the notification requirements specified in Subsection R315-319-106(g), and the internet requirements specified in Subsection R315-319-107(g).

R315-319-83. Operating Criteria - Inspection Requirements for CCR Surface Impoundments.

(a) Inspections by a qualified person.

(1) All CCR surface impoundments and any lateral expansion of a CCR surface impoundment shall be examined by a qualified person as follows:

(i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit;

(ii) At intervals not exceeding seven days, inspect the discharge of all outlets of hydraulic structures which pass underneath the base of the surface impoundment or through the dike of the CCR unit for abnormal discoloration, flow or discharge of debris or sediment; and

(iii) At intervals not exceeding 30 days, monitor all CCR unit instrumentation.

(iv) The results of the inspection by a qualified person shall be recorded in the facility's operating record as required by Subsection R315-319-105(g)(5).

(2) Timeframes for inspections by a qualified person

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit shall initiate the inspections required under Subsection R315-319-83(a) no later than October 19, 2015.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator of the CCR unit shall initiate the inspections required under Subsection R315-319-83(a) upon initial receipt of CCR by the CCR unit.

(b) Annual inspections by a qualified professional engineer.

(1) If the existing or new CCR surface impoundment or any lateral expansion of the CCR surface impoundment is subject to the periodic structural stability assessment requirements under Subsection R315-319-73(d) or Subsection R315-319-74(d), the CCR unit shall additionally be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and

maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection shall, at a minimum, include:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record, e.g., CCR unit design and construction information required by Subsections R315-319-73(c)(1) and 74(c)(1), previous periodic structural stability assessments required under Subsections R315-319-73(d) and 74(d), the results of inspections by a qualified person, and results of previous annual inspections;

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and

(iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.

(2) Inspection report. The qualified professional engineer shall prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the impounding structure since the previous annual inspection;

(ii) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;

(iii) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;

(iv) The storage capacity of the impounding structure at the time of the inspection;

(v) The approximate volume of the impounded water and CCR at the time of the inspection;

(vi) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and

(vii) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

(3) Timeframes for conducting the initial inspection

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit shall complete the initial inspection required by Subsections R315-319-8 (b)(1) and (2) no later than January 18, 2016.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator of the CCR unit shall complete the initial annual inspection required by Subsections R315-319-83(b)(1) and (2) is completed no later than 14 months following the date of initial receipt of CCR in the CCR unit.

(4) Frequency of inspections.

(i) Except as provided for in Subsection R315-319-83(b)(4)(ii), the owner or operator of the CCR unit shall conduct the inspection required by Subsections R315-319-83(b)(1) and (2) on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. For purposes of Section R315-319-83, the owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by Subsection R315-319-105(g)(6).

(ii) In any calendar year in which both the periodic inspection by a qualified professional engineer and the quinquennial, occurring every five years, structural stability assessment by a qualified professional engineer required by Subsections R315-319-73(d) and 74(d) are required to be completed, the annual inspection is not required, provided the structural stability assessment is completed during the calendar year. If the annual inspection is not conducted in a year as provided by Subsection R315-319-83(b)(4)(ii), the deadline for completing the next annual inspection is one year from the date of completing the quinquennial structural stability assessment.

(5) If a deficiency or release is identified during an inspection, the owner or operator shall remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

(c) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(g), the notification requirements specified in Subsection R315-319-106(g), and the internet requirements specified in Subsection R315-319-107(g).

R315-319-84. Operating Criteria - Inspection Requirements for CCR Landfills.

(a) Inspections by a qualified person.

(1) All CCR landfills and any lateral expansion of a CCR landfill shall be examined by a qualified person as follows:

(i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit; and

(ii) The results of the inspection by a qualified person shall be recorded in the facility's operating record as required by Subsection R315-319-105(g)(8).

(2) Timeframes for inspections by a qualified person

(i) Existing CCR landfills. The owner or operator of the CCR unit shall initiate the inspections required under Subsection R315-319-84(a) no later than October 19, 2015.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator of the CCR unit shall initiate the inspections required under Subsection R315-319-84(a) upon initial receipt of CCR by the CCR unit.

(b) Annual inspections by a qualified professional engineer.

(1) Existing and new CCR landfills and any lateral expansion of a CCR landfill shall be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection shall, at a minimum, include:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record, e.g., the results of inspections by a qualified person, and results of previous annual inspections; and

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

(2) Inspection report. The qualified professional engineer shall prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the structure since the previous annual inspection;

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

(iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and

(iv) Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

(3) Timeframes for conducting the initial inspection

(i) Existing CCR landfills. The owner or operator of the CCR unit shall complete the initial inspection required by Subsections R315-319-84(b)(1) and (2) no later than January 18, 2016.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator of the CCR unit shall complete the initial annual inspection required by Subsections R315-319-84(b)(1) and (2) no later than 14 months following the date of initial receipt of CCR in the CCR unit.

(4) Frequency of inspections. The owner or operator of the CCR unit shall conduct the inspection required by Subsections R315-319-84(b)(1) and (2) on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. For purposes of Section R315-319-84, the owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by Subsection R315-319-105(g)(9).

(5) If a deficiency or release is identified during an inspection, the owner or operator shall remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

(c) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(g), the notification requirements specified in Subsection R315-319-106(g), and the internet requirements specified in Subsection R315-319-107(g).

R315-319-90. Groundwater Monitoring and Corrective Action - Applicability.

(a) Except as provided for in Subsection R315-319-100 for inactive CCR surface impoundments, all CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under Subsections R315-319-90 through 98.

(b) Initial timeframes

(1) Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2017, the owner or operator of the CCR unit shall be in compliance with the following groundwater monitoring requirements:

(i) Install the groundwater monitoring system as required by Subsection R315-319-91;

(ii) Develop the groundwater sampling and analysis program to include selection of the statistical procedures to be used for evaluating groundwater monitoring data as required by Subsection R315-319-93;

(iii) Initiate the detection monitoring program to include obtaining a minimum of eight independent samples for each background and downgradient well as required by Subsection R315-319-94(b); and

(iv) Begin evaluating the groundwater monitoring data for statistically significant increases over background levels for the constituents listed in appendix III of Rule R315-319 as required by Subsection R315-319-94.

(2) New CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units. Prior to initial receipt of CCR by the CCR unit, the owner or operator shall be in compliance with the groundwater monitoring requirements specified in Subsections R315-319-90(b)(1)(i) and (ii). In addition, the owner or operator of the CCR unit shall initiate the detection monitoring program to include obtaining a minimum of eight independent samples for each background well as required by Subsection R315-319-94(b).

(c) Once a groundwater monitoring system and groundwater monitoring program has been established at the CCR unit as required by Sections R315-319-50 through 107, the owner or operator shall conduct groundwater monitoring and, if necessary, corrective action throughout the active life and post-closure care period of the CCR unit.

(d) In the event of a release from a CCR unit, the owner or operator shall immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. The owner or operator of the CCR unit shall comply with all applicable requirements in Subsections R315-319-96, 97, and 98.

(e) Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator shall prepare an annual groundwater monitoring and corrective action report and forward the report to the Director by March 1 of each year. For new CCR landfills, new CCR

surface impoundments, and all lateral expansions of CCR units, the owner or operator shall prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by Sections R315-319-50 through 107, and annually thereafter. For the preceding calendar year, the annual report shall document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of Sections R315-319-90, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by Subsection R315-319-105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report shall contain the following information, to the extent available:

(1) A map, aerial image, or diagram showing the CCR unit and all background, or upgradient, and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

(2) Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

(3) In addition to all the monitoring data obtained under Sections R315-319-90 through 98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

(4) A narrative discussion of any transition between monitoring programs, e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels; and

(5) Other information required to be included in the annual report as specified in Section R315-319-90 through 98.

(f) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(h), the notification requirements specified in Subsection R315-319-106(h), and the internet requirements specified in Subsection R315-319-107(h).

R315-319-91. Groundwater Monitoring and Corrective Action - Groundwater Monitoring Systems.

(a) Performance standard. The owner or operator of a CCR unit shall install a groundwater monitoring system consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that:

(1) Accurately represent the quality of background groundwater that has not been affected by leakage from a CCR unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the CCR management area where:

(i) Hydrogeologic conditions do not allow the owner or operator of the CCR unit to determine what wells are hydraulically upgradient; or

(ii) Sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells; and

(2) Accurately represent the quality of groundwater passing the waste boundary of the CCR unit. The downgradient monitoring system shall be installed at the waste boundary that ensures detection of groundwater contamination in the uppermost aquifer. All potential contaminant pathways shall be monitored.

(b) The number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information that shall include thorough characterization of:

(1) Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and

(2) Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

(c) The groundwater monitoring system shall include the minimum number of monitoring wells necessary to meet the performance standards specified in Subsection R315-319-91(a), based on the site-specific information specified in Subsection R315-319-91(b). The groundwater monitoring system shall contain:

(1) A minimum of one upgradient and three downgradient monitoring wells; and

(2) Additional monitoring wells as necessary to accurately represent the quality of background groundwater that has not been affected by leakage from the CCR unit and the quality of groundwater passing the waste boundary of the CCR unit.

(d) The owner or operator of multiple CCR units may install a multiunit groundwater monitoring system instead of separate groundwater monitoring systems for each CCR unit.

(1) The multiunit groundwater monitoring system shall be equally as capable of detecting monitored constituents at the waste boundary of the CCR unit as the individual groundwater monitoring system specified in Subsections R315-319-91(a) through (c) for each CCR unit based on the following factors:

(i) Number, spacing, and orientation of each CCR unit;

(ii) Hydrogeologic setting;

(iii) Site history; and

(iv) Engineering design of the CCR unit.

(2) If the owner or operator elects to install a multiunit groundwater monitoring system, and if the multiunit system includes at least one existing unlined CCR surface impoundment as determined by Subsection R315-319-71(a), and if at any time after October 19,

2015 the owner or operator determines in any sampling event that the concentrations of one or more constituents listed in appendix IV to Rule R315-319 are detected at statistically significant levels above the groundwater protection standard established under Subsection R315-319-95(h) for the multiunit system, then all unlined CCR surface impoundments comprising the multiunit groundwater monitoring system are subject to the closure requirements under Subsection R315-319-101(a) to retrofit or close.

(e) Monitoring wells shall be cased in a manner that maintains the integrity of the monitoring well borehole. This casing shall be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space, i.e., the space between the borehole and well casing, above the sampling depth shall be sealed to prevent contamination of samples and the groundwater.

(1) The owner or operator of the CCR unit shall document and include in the operating record the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices. The qualified professional engineer shall be given access to this documentation when completing the groundwater monitoring system certification required under Subsection R315-319-91(f).

(2) The monitoring wells, piezometers, and other measurement, sampling, and analytical devices shall be operated and maintained so that they perform to the design specifications throughout the life of the monitoring program.

(f) The owner or operator shall obtain a certification from a qualified professional engineer stating that the groundwater monitoring system has been designed and constructed to meet the requirements of Section R315-319-91. If the groundwater monitoring system includes the minimum number of monitoring wells specified in Subsection R315-319-91(c)(1), the certification shall document the basis supporting this determination.

(g) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(h), the notification requirements specified in Subsection R315-319-106(h), and the internet requirements specified in Subsection R315-319-107(h).

R315-319-93. Groundwater Monitoring and Corrective Action - Groundwater Sampling and Analysis Requirements.

(a) The groundwater monitoring program shall include consistent sampling and analysis procedures designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells required by Subsection R315-319-91. The owner or operator of the CCR unit shall develop and receive approval from the Director for a sampling and analysis program that includes procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures;

(4) Chain of custody control; and

(5) Quality assurance and quality control.

(b) The groundwater monitoring program shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. For purposes of Subsections R315-319-90 through 98, the term constituent refers to both hazardous constituents and other monitoring parameters listed in either appendix III or IV of Rule R315-319.

(c) Groundwater elevations shall be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator of the CCR unit shall determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same CCR management area shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

(d) The owner or operator of the CCR unit shall establish background groundwater quality in a hydraulically upgradient or background well(s) for each of the constituents required in the particular groundwater monitoring program that applies to the CCR unit as determined under Subsection R315-319-94(a) or Subsection R315-319-95(a). Background groundwater quality may be established at wells that are not located hydraulically upgradient from the CCR unit if it meets the requirements of Subsection R315-319-91(a)(1).

(e) The number of samples collected when conducting detection monitoring and assessment monitoring, for both downgradient and background wells, shall be consistent with the statistical procedures chosen under Subsection R315-319-93(f) and the performance standards under Subsection R315-319-93(g). The sampling procedures shall be those specified under Subsections R315-319-94(b) through (d) for detection monitoring, Subsection R315-319-95(b) through (d) for assessment monitoring, and Subsection R315-319-96(b) for corrective action.

(f) The owner or operator of the CCR unit shall select one of the statistical methods specified in Subsections R315-319-93(f)(1) through (5) to be used in evaluating groundwater monitoring data for each specified constituent. The statistical test chosen shall be conducted separately for each constituent in each monitoring well.

(1) A parametric analysis of variance followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.

(2) An analysis of variance based on ranks followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

(3) A tolerance or prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

(4) A control chart approach that gives control limits for each constituent.

(5) Another statistical test method that meets the performance standards of Subsection R315-319-93(g) and has been approved by the Director.

(6) The owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area. The certification shall include a narrative description of the statistical method selected to evaluate the groundwater monitoring data.

(g) Any statistical method chosen under Subsection R315-319-93(f) shall comply with the following performance standards, as appropriate, based on the statistical test method used:

(1) The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of constituents. Normal distributions of data values shall use parametric methods. Non-normal distributions shall use non-parametric methods. If the distribution of the constituents is shown by the owner or operator of the CCR unit to be inappropriate for a normal theory test, then the data shall be transformed or a distribution-free, non-parametric, theory test shall be used. If the distributions for the constituents differ, more than one statistical method may be needed.

(2) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparison procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.

(3) If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be such that this approach is at least as effective as any other approach in Section R315-319-93 for evaluating groundwater data. The parameter values shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

(4) If a tolerance interval or a predictional interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval shall contain, shall be such that this approach is at least as effective as any other approach in Section R315-319-93 for evaluating groundwater data. These parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

(5) The statistical method shall account for data below the limit of detection with one or more statistical procedures that shall at least as effective as any other approach in Section R315-319-93 for evaluating groundwater data. Any practical quantitation limit that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

(6) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(h) The owner or operator of the CCR unit shall determine whether or not there is a statistically significant increase over background values for each constituent required in the particular groundwater monitoring program that applies to the CCR unit, as determined under Subsection R315-319-94(a) or Subsection R315-319-95(a).

(1) In determining whether a statistically significant increase has occurred, the owner or operator shall compare the groundwater quality of each constituent at each monitoring well designated pursuant to Subsection R315-319-91(a)(2) or (d)(1) to the background value of that constituent, according to the statistical procedures and performance standards specified under Subsections R315-319-93(f) and (g).

(2) Within 90 days after completing sampling and analysis, the owner or operator shall determine whether there has been a statistically significant increase over background for any constituent at each monitoring well.

(i) The owner or operator shall measure "total recoverable metals" concentrations in measuring groundwater quality. Measurement of total recoverable metals captures both the particulate fraction and dissolved fraction of metals in natural waters. Groundwater samples shall not be field-filtered prior to analysis.

(j) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(h), the notification requirements specified in Subsection R315-319-106(h), and the Internet requirements specified in Subsection R315-319-107(h).

R315-319-94 Groundwater Monitoring and Corrective Action - Detection Monitoring Program.

(a) The owner or operator of a CCR unit shall conduct detection monitoring at all groundwater monitoring wells consistent with Section R315-319-94. At a minimum, a detection monitoring program shall include groundwater monitoring for all constituents listed in appendix III to Rule R315-319.

(b) Except as provided in Subsection R315-319-94(d), the monitoring frequency for the constituents listed in appendix III to Rule R315-319 shall be at least semiannual during the active life of the CCR unit and the post-closure period. For existing CCR landfills and existing CCR surface impoundments, a minimum of eight independent samples from each background and downgradient well shall be collected and analyzed for the constituents listed in appendix III and IV to Rule R315-319 no later than October 17, 2017. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, a minimum of eight independent samples for each background well shall be collected and analyzed for the constituents listed in appendices III and IV to Rule R315-319 during the first six months of sampling.

(c) The number of samples collected and analyzed for each background well and downgradient well during subsequent

semiannual sampling events shall be consistent with Subsection R315-319-93(e), and shall account for any unique characteristics of the site, but shall be at least one sample from each background and downgradient well.

(d) The owner or operator of a CCR unit may demonstrate the need for an alternative monitoring frequency for repeated sampling and analysis for constituents listed in appendix III to Rule R315-319 during the active life and the post-closure care period based on the availability of groundwater. This demonstration shall be submitted and approved by the Director. If there is not adequate groundwater flow to sample wells semiannually, the alternative frequency shall be no less than annual. The need to vary monitoring frequency shall be evaluated on a site-specific basis. The demonstration shall be supported by, at a minimum, the information specified in Subsections R315-319-94(d)(1) and (2).

(1) Information documenting that the need for less frequent sampling. The alternative frequency shall be based on consideration of the following factors:

(i) Lithology of the aquifer and unsaturated zone;

(ii) Hydraulic conductivity of the aquifer and unsaturated zone; and

(iii) Groundwater flow rates.

(2) Information documenting that the alternative frequency will be no less effective in ensuring that any leakage from the CCR unit will be discovered within a timeframe that will not materially delay establishment of an assessment monitoring program.

(3) The owner or operator shall obtain a certification from a qualified professional engineer stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of Section R315-319-94. The owner or operator shall include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by Subsection R315-319-90(e).

(e) If the owner or operator of the CCR unit determines, pursuant to Subsection R315-319-93(h) that there is a statistically significant increase over background levels for one or more of the constituents listed in appendix III to Rule R315-319 at any monitoring well at the waste boundary specified under Subsection R315-319-91(a)(2), the owner or operator shall:

(1) Except as provided for in Subsection R315-319-94(e)(2), within 90 days of detecting a statistically significant increase over background levels for any constituent, establish an assessment monitoring program meeting the requirements of Subsection R315-319-95.

(2) The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator shall complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under Section R315-319-94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit shall initiate an assessment monitoring program as required under Subsection R315-319-95. The owner or operator shall also include the demonstration in the annual groundwater monitoring and corrective action report required by Subsection R315-319-90(e), in addition to the certification by a qualified professional engineer.

(3) The owner or operator of a CCR unit shall prepare a notification stating that an assessment monitoring program has been established. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by Subsection R315-319-105(h)(5).

(f) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(h), the notification requirements specified in Subsection R315-319-106(h), and the Internet requirements specified in Subsection R315-319-107(h).

R315-319-95. Groundwater Monitoring and Corrective Action - Assessment Monitoring Program.

(a) Assessment monitoring is required whenever a statistically significant increase over background levels has been detected for one or more of the constituents listed in appendix III to Rule R315-319.

(b) Within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner or operator of the CCR unit shall sample and analyze the groundwater for all constituents listed in appendix IV to Rule R315-319. The number of samples collected and analyzed for each well during each sampling event shall be consistent with Subsection R315-319-93(e), and shall account for any unique characteristics of the site, but shall be at least one sample from each well.

(c) The owner or operator of a CCR unit may demonstrate the need for an alternative monitoring frequency for repeated sampling and analysis for constituents listed in appendix IV to Rule R315-319 during the active life and the post-closure care period based on the availability of groundwater. If there is not adequate groundwater flow to sample wells semiannually, the alternative frequency shall be no less than annual. The need to vary monitoring frequency shall be evaluated on a site-specific basis. The demonstration shall be supported by, at a minimum, the information specified in Subsections R315-319-95(c)(1) and (2).

(1) Information documenting that the need for less frequent sampling. The alternative frequency shall be based on consideration of the following factors:

(i) Lithology of the aquifer and unsaturated zone;

(ii) Hydraulic conductivity of the aquifer and unsaturated zone; and

(iii) Groundwater flow rates.

(2) Information documenting that the alternative frequency will be no less effective in ensuring that any leakage from the CCR unit will be discovered within a timeframe that will not materially delay the initiation of any necessary remediation measures.

(3) The owner or operator shall obtain a certification from a qualified professional engineer stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of Section R315-319-95. The owner or operator shall include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by Subsection R315-319-90(e).

(d) After obtaining the results from the initial and subsequent sampling events required in Subsection R315-319-95(b), the owner or operator shall:

(1) Within 90 days of obtaining the results, and on at least a semiannual basis thereafter, resample all wells that were installed pursuant to the requirements of Section R315-319-91, conduct analyses for all parameters in appendix III to Rule R315-319 and for those constituents in appendix IV to Rule R315-319 that are detected in response to Subsection R315-319-95(b), and record their concentrations in the facility operating record. The number of samples collected and analyzed for each background well and downgradient well during subsequent semiannual sampling events shall be consistent with Subsection R315-319-93(e), and shall account for any unique characteristics of the site, but shall be at least one sample from each background and downgradient well;

(2) Establish groundwater protection standards for all constituents detected pursuant to Subsection R315-319-95(b) or (d). The groundwater protection standards shall be established in accordance with Subsection R315-319-95(h); and

(3) Include the recorded concentrations required by Subsection R315-319-95(d)(1), identify the background concentrations established under Subsection R315-319-94(b), and identify the groundwater protection standards established under Subsection R315-319-95(d)(2) in the annual groundwater monitoring and corrective action report required by Subsection R315-319-90(e).

(e) If the concentrations of all constituents listed in appendices III and IV of Rule R315-319 are shown to be at or below background values, using the statistical procedures in Subsection R315-319-93(g), for two consecutive sampling events, the owner or operator may return to detection monitoring of the CCR unit. The owner or operator shall prepare a notification stating that detection monitoring is resuming for the CCR unit and submit the notification to the Director for approval. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by Subsection R315-319-105(h)(7).

(f) If the concentrations of any constituent in appendices III and IV to Rule R315-319 are above background values, but all concentrations are below the groundwater protection standard established under Subsection R315-319-95(h), using the statistical procedures in Subsection R315-319-93(g), the owner or operator shall continue assessment monitoring in accordance with Section R315-319-95.

(g) If one or more constituents in appendix IV to Rule R315-319 are detected at statistically significant levels above the groundwater protection standard established under Subsection R315-319-95(h) in any sampling event, the owner or operator shall prepare a notification identifying the constituents in appendix IV to Rule R315-319 that have exceeded the groundwater protection standard. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by Subsection R315-319-105(h)(8). The owner or operator of the CCR unit also shall:

(1) Characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. The characterization shall be sufficient to support a complete and accurate assessment of the corrective measures necessary to effectively clean up all releases from the CCR unit pursuant to Subsection R315-319-96. Characterization of the release includes the following minimum measures:

(i) Install additional monitoring wells necessary to define the contaminant plume(s);

(ii) Collect data on the nature and estimated quantity of material released including specific information on the constituents listed in appendix IV of Rule R315-319 and the levels at which they are present in the material released;

(iii) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with Subsection R315-319-95(d)(1); and

(iv) Sample all wells in accordance with Subsection R315-319-95(d)(1) to characterize the nature and extent of the release.

(2) Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site if indicated by sampling of wells in accordance with Subsection R315-319-95(g)(1). The owner or operator has completed the notifications when they are placed in the facility's operating record as required by Subsection R315-319-105(h)(8).

(3) Within 90 days of finding that any of the constituents listed in appendix IV to Rule R315-319 have been detected at a statistically significant level exceeding the groundwater protection standards the owner or operator shall either:

(i) Initiate an assessment of corrective measures as approved by the Director and as required by Subsection R315-319-96; or

(ii) Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration shall be submitted to and has received approval from the Director and supported by a report that includes the factual or evidentiary basis for any conclusions and shall be certified to be accurate by a qualified professional engineer. If a successful demonstration is made, the owner or operator shall continue monitoring in accordance with the assessment monitoring program pursuant to Section R315-319-95, and may return to detection monitoring if the constituents in appendices III and IV to Rule R315-319 are at or below background as specified in Subsection R315-319-95(e). The owner or operator shall also include the demonstration in the annual groundwater monitoring and corrective action report required by Subsection R315-319-90(e), in addition to the certification by a qualified professional engineer.

(4) If a successful demonstration has not been made at the end of the 90 day period provided by Subsection R315-319-95(g)(3)(ii), the owner or operator of the CCR unit shall initiate the assessment of corrective measures requirements under Subsection R315-319-96.

(5) If an assessment of corrective measures is required under Subsection R315-319-96 by either Subsection R315-319-95(g)(3)(i)

or (g)(4), and if the CCR unit is an existing unlined CCR surface impoundment as determined by Subsection R315-319-71(a), then the CCR unit is subject to the closure requirements under Subsection R315-319-101(a) to retrofit or close. In addition, the owner or operator shall prepare a notification stating that an assessment of corrective measures has been initiated.

(h) The owner or operator of the CCR unit shall establish a groundwater protection standard for each constituent in appendix IV to Rule R315-319 detected in the groundwater. The groundwater protection standard shall be:

(1) For constituents for which a ground water protection standard has been estaliblished in rule R315-308, the ground water protection standard in Rule R315-308;

(2) For constituents for which a ground water protection standard has not been established in Rule R315-308, the background concentration for the constituent established from wells in accordance with Section R315-319-91; or

(3) For constituents for which the background level is higher than the ground water protection standard identified under Subsection R315-319-95(h)(1), the background concentration.

(i) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(h), the notification requirements specified in Subsection R315-319-106(h), and the Internet requirements specified in Subsection R315-319-107(h).

R315-319-96. Groundwater Monitoring and Corrective Action Assessment of Corrective Measures.

(a) Within 90 days of finding that any constituent listed in appendix IV to Rule R315-319 has been detected at a statistically significant level exceeding the groundwater protection standard defined under Subsection R315-319-95(h), or immediately upon detection of a release from a CCR unit, the owner or operator shall initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures shall be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator shall obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator shall also include the demonstration in the annual groundwater monitoring and corrective action report required by Subsection R315-319-90(e), in addition to the certification by a qualified professional engineer.

(b) The owner or operator of the CCR unit shall continue to monitor groundwater in accordance with the assessment monitoring program as specified in Subsection R315-319-95.

(c) The assessment under Subsection R315-319-96(a) shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under Subsection R315-319-97 addressing at least the following:

(1) The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;

(2) The time required to begin and complete the remedy;

(3) The institutional requirements, such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).

(d) The owner or operator shall place the completed assessment of corrective measures in the facility's operating record. The assessment has been completed when it is placed in the facility's operating record as required by Subsection R315-319-105(h)(10).

(e) The owner or operator shall discuss the results of the corrective measures assessment at least 30 days prior to the selection of remedy, in a public meeting with interested and affected parties.

(f) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(h), the notification requirements specified in Subsection R315-319-106(h), and the Internet requirements specified in Subsection R315-319-107(h).

R315-319-97. Groundwater Monitoring and Corrective Action Selection of Remedy.

(a) Based on the results of the corrective measures assessment conducted under Subsection R315-319-96, the owner or operator shall, as soon as feasible, select a remedy that, at a minimum, meets the standards listed in Subsection R315-319-97(b). This requirement applies to, not in place of, any applicable standards under the Occupational Safety and Health Act. The owner or operator shall prepare a semiannual report describing the progress in selecting and designing the remedy. Upon selection of a remedy, the owner or operator shall prepare a final report describing the selected remedy and how it meets the standards specified in Subsection R315-319-97(b). The remedy and report shall be approved by the Director. The owner or operator shall obtain a certification from a qualified professional engineer that the remedy selected meets the requirements of Section R315-319-97. The report has been completed when it is placed in the operating record as required by Subsection R315-319-105(h)(12).

(b) Remedies shall:

(1) Be protective of human health and the environment;

(2) Attain the groundwater protection standard as specified pursuant to Subsection R315-319-95(h);

(3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to Rule R315-319 into the environment;

(4) Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible, taking into account factors such as avoiding inappropriate disturbance of sensitive ecosystems;

(5) Comply with standards for management of wastes as specified in Subsection R315-319-98(d).

(c) In selecting a remedy that meets the standards of Subsection R315-319-97(b), the owner or operator of the CCR unit shall consider the following evaluation factors:

(1) The long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:

(i) Magnitude of reduction of existing risks;

(ii) Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy;

(iii) The type and degree of long-term management required, including monitoring, operation, and maintenance;

(iv) Short-term risks that might be posed to the community or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of contaminant;

(v) Time until full protection is achieved;

(vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment;

(vii) Long-term reliability of the engineering and institutional controls; and

(viii) Potential need for replacement of the remedy.

(2) The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

(i) The extent to which containment practices will reduce further releases; and

(ii) The extent to which treatment technologies may be used.

(3) The ease or difficulty of implementing a potential remedy(s) based on consideration of the following types of factors:

(i) Degree of difficulty associated with constructing the technology;

(ii) Expected operational reliability of the technologies;

(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(iv) Availability of necessary equipment and specialists; and

(v) Available capacity and location of needed treatment, storage, and disposal services.

(4) The degree to which community concerns are addressed by a potential remedy(s).

(d) The owner or operator shall specify as part of the selected remedy a schedule(s) for implementing and completing remedial activities. Such a schedule shall require the completion of remedial activities within a reasonable period of time taking into consideration the factors set forth in Subsections R315-319-97 (d)(1) through (6). The owner or operator of the CCR unit shall consider the following factors in determining the schedule of remedial activities:

(1) Extent and nature of contamination, as determined by the characterization required under Subsection R315-319-95(g);

(2) Reasonable probabilities of remedial technologies in achieving compliance with the groundwater protection standards established under Subsection R315-319-95(h) and other objectives of the remedy;

(3) Availability of treatment or disposal capacity for CCR managed during implementation of the remedy;

(4) Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

(5) Resource value of the aquifer including:

(i) Current and future uses;

(ii) Proximity and withdrawal rate of users;

(iii) Groundwater quantity and quality;

(iv) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to CCR constituents;

(v) The hydrogeologic characteristic of the facility and surrounding land; and

(vi) The availability of alternative water supplies; and

(6) Other relevant factors as required by the Director.

(e) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(h), the notification requirements specified in Subsection R315-319-106(h), and the Internet requirements specified in Subsection R315-319-107(h).

R315-319-98. Groundwater Monitoring and Corrective Action Implementation of the Corrective Action Program.

(a) Within 90 days of selecting a remedy under Subsection R315-319-97, the owner or operator shall initiate remedial activities. Based on the schedule established under Subsection R315-319-97(d) for implementation and completion of remedial activities the owner or operator shall:

(1) Establish and implement a corrective action groundwater monitoring program that:

(i) At a minimum, meets the requirements of an assessment monitoring program under Subsection R315-319-95;

(ii) Documents the effectiveness of the corrective action remedy; and

(iii) Demonstrates compliance with the groundwater protection standard pursuant to Subsection R315-319-98(c).

(2) Implement the corrective action remedy selected under Subsection R315-319-97; and

(3) Take any interim measures necessary to reduce the contaminants leaching from the CCR unit, and/or potential exposures to human or ecological receptors. Interim measures shall, to the greatest extent feasible, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to Subsection R315-319-97. The following factors shall be considered by an owner or operator in determining whether interim measures are necessary:

(i) Time required to develop and implement a final remedy;

(ii) Actual or potential exposure of nearby populations or environmental receptors to any of the constituents listed in appendix IV of Rule R315-319;

(iii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(iv) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

(v) Weather conditions that may cause any of the constituents listed in appendix IV to this part to migrate or be released;

(vi) Potential for exposure to any of the constituents listed in appendix IV to Rule R315-319 as a result of an accident or failure of a container or handling system; and

(vii) Other situations that may pose threats to human health and the environment.

(b) If an owner or operator of the CCR unit, determines, at any time, that compliance with the requirements of Subsection R315-319-97(b) is not being achieved through the remedy selected, the owner or operator shall, with approval of the Director, implement other methods or techniques that could feasibly achieve compliance with the requirements.

(c) Remedies selected pursuant to Subsection R315-319-97 shall be considered complete when:

(1) The owner or operator of the CCR unit demonstrates compliance with the groundwater protection standards established under Subsection R315-319-95(h) has been achieved at all points within the plume of contamination that lie beyond the groundwater monitoring well system established under Subsection R315-319-91 and has received Director approval.

(2) Compliance with the groundwater protection standards established under Subsection R315-319-95(h) has been achieved by demonstrating that concentrations of constituents listed in appendix IV to Rule R315-319 have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in Subsection R315-319-93(f) and (g).

(3) All actions required to complete the remedy have been satisfied.

(d) All CCR that are managed pursuant to a remedy required under Section R315-319-97, or an interim measure required under Subsection R315-319-98(a)(3), shall be managed in a manner that complies with all applicable Utah requirements.

(e) Upon completion of the remedy, the owner or operator shall prepare a notification stating that the remedy has been completed. The notification shall be submitted to and be approved by the Director. The owner or operator shall obtain a certification from a qualified professional engineer attesting that the remedy has been completed in compliance with the requirements of Subsection R315-319-98(c). The report has been completed when it is placed in the operating record as required by Subsection R315-319-105(h)(13).

(f) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(h), the notification requirements specified in Subsection R315-319-106(h), and the internet requirements specified in Subsection R315-319-107(h).

R315-319-100. Closure and Post-Closure Care Inactive CCR Surface Impoundments.

(a) Inactive CCR surface impoundments are subject to all of the requirements of Sections R315-319-50 through 107 applicable to existing CCR surface impoundments.

R315-319-101. Closure and Post-Closure Care - Closure or Retrofit of CCR Units.

(a) The owner or operator of an existing unlined CCR surface impoundment, as determined under Subsection R315-319-71(a), is subject to the requirements of Subsection R315-319-101(a)(1).

(1) Except as provided by Subsection R315-319-101(a)(3), if at any time after October 19, 2015 an owner or operator of an existing unlined CCR surface impoundment determines in any sampling event that the concentrations of one or more constituents listed in appendix IV to Rule R315-319 are detected at statistically significant levels above the groundwater protection standard established under Subsection R315-319-95(h) for such CCR unit, within six months of making such determination, the owner or operator of the existing unlined CCR surface impoundment shall cease placing CCR and non-CCR wastestreams into such CCR surface impoundment and either retrofit or close the CCR unit in accordance with the requirements of Subsection R315-319-102.

(2) An owner or operator of an existing unlined CCR surface impoundment that closes in accordance with Subsection R315-319-101(a)(1) shall include a statement in the notification required under Subsection R315-319-102(g) or (k)(5) that the CCR surface impoundment is closing or retrofitting under the requirements of Subsection R315-319-101(a)(1).

(3) The timeframe specified in Subsection R315-319-101(a)(1) does not apply if the owner or operator complies with the alternative closure procedures specified in Subsection R315-319-103.

(4) At any time after the initiation of closure under Subsection R315-319-101(a)(1), the owner or operator may cease closure activities and initiate a retrofit of the CCR unit in accordance with the requirements of Subsection R315-319-102(k).

(b) The owner or operator of an existing CCR surface impoundment is subject to the requirements of Subsection R315-319-101(b)(1).

(1) Except as provided by Subsection R315-319-101(b)(4), within six months of determining that an existing CCR surface impoundment has not demonstrated compliance with any location standard specified in Subsections R315-319-60(a), 61(a), 62(a), 63(a), and 64(a), the owner or operator of the CCR surface impoundment shall cease placing CCR and non-CCR wastestreams into such CCR unit and close the CCR unit in accordance with the requirements of Subsection R315-319-102.

(2) Within six months of either failing to complete the initial or any subsequent periodic safety factor assessment required by Subsection R315-319-73(e) by the deadlines specified in Subsections R315-319-73(f)(1) through (3) or failing to document that the calculated factors of safety for the existing CCR surface impoundment achieve the minimum safety factors specified in Subsections R315-

319-73(e)(1)(i) through (iv), the owner or operator of the CCR surface impoundment shall cease placing CCR and non-CCR wastestreams into such CCR unit and close the CCR unit in accordance with the requirements of Subsection R315-319-102.

(3) An owner or operator of an existing CCR surface impoundment that closes in accordance with Subsection R315-319-101(b)(1) or (2) shall include a statement in the notification required under Subsection R315-319-102(g) that the CCR surface impoundment is closing under the requirements of Subsection R315-319-101(b)(1) or (2).

(4) The timeframe specified in Subsection R315-319-101(b)(1) does not apply if the owner or operator complies with the alternative closure procedures specified in Subsection R315-319-103.

(c) The owner or operator of a new CCR surface impoundment is subject to the requirements of Subsection R315-319-101(c)(1).

(1) Within six months of either failing to complete the initial or any subsequent periodic safety factor assessment required by Subsection R315-319-74(e) by the deadlines specified in Subsections R315-319-74(f)(1) through (3) or failing to document that the calculated factors of safety for the new CCR surface impoundment achieve the minimum safety factors specified in Subsections R315-319-74(e)(1)(i) through (v), the owner or operator of the CCR surface impoundment shall cease placing CCR and non-CCR wastestreams into such CCR unit and close the CCR unit in accordance with the requirements of Section R315-319-102.

(2) An owner or operator of an new CCR surface impoundment that closes in accordance with Subsection R315-319-101(c)(1) shall include a statement in the notification required under Subsection R315-319-102(g) that the CCR surface impoundment is closing under the requirements of Subsection R315-319-101(c)(1).

(d) The owner or operator of an existing CCR landfill is subject to the requirements of Subsection R315-319-101(d)(1).

(1) Except as provided by Subsection R315-319-101(d)(3), within six months of determining that an existing CCR landfill has not demonstrated compliance with the location restriction for unstable areas specified in Subsection R315-319-64(a), the owner or operator of the CCR unit shall cease placing CCR and non-CCR waste streams into such CCR landfill and close the CCR unit in accordance with the requirements of Section R315-319-102.

(2) An owner or operator of an existing CCR landfill that closes in accordance with Subsection R315-319-101(d)(1) shall include a statement in the notification required under Subsection R315-319-102(g) that the CCR landfill is closing under the requirements of Subsection R315-319-101(d)(1).

(3) The timeframe specified in Subsection R315-319-101(d)(1) does not apply if the owner or operator complies with the alternative closure procedures specified in Section R315-319-103.

R315-319-102. Closure and Post-Closure Care - Criteria for Conducting the Closure or Retrofit of CCR Units.

(a) Closure of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit shall be completed either by leaving the CCR in place and installing a final cover system or through removal of the CCR and decontamination of the CCR unit, as described in Subsections R315-319-102(b) through (j). Retrofit of a CCR surface impoundment shall be completed in accordance with the requirements in Subsection R315-319-102(k).

(b) Written closure plan

(1) Content of the plan. The owner or operator of a CCR unit shall prepare a written closure plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally accepted good engineering practices. The written closure plan shall include, at a minimum, the information specified in Subsections R315-319-102(b)(1)(i) through (vi).

(i) A narrative description of how the CCR unit will be closed in accordance with Section R315-319-102.

(ii) If closure of the CCR unit will be accomplished through removal of CCR from the CCR unit, a description of the procedures to remove the CCR and decontaminate the CCR unit in accordance with Subsection R315-319-102(c).

(iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with Subsection R315-319-102(d), and the methods and procedures to be used to install the final cover. The closure plan shall also discuss how the final cover system will achieve the performance standards specified in Subsection R315-319-102(d).

(iv) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.

(v) An estimate of the largest area of the CCR unit ever requiring a final cover as required by Subsection R315-319-102(d) at any time during the CCR unit's active life.

(vi) A schedule for completing all activities necessary to satisfy the closure criteria in Section R315-319-102, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit closure. When preparing the written closure plan, if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified in Subsection R315-319-102(f)(1), the written closure plan shall include the site-specific information, factors and considerations that would support any time extension sought under Subsection R315-319-102(f)(2).

(2) Timeframes for preparing the initial written closure plan

(i) Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2016, the owner or operator of the CCR unit shall prepare an initial written closure plan consistent with the requirements specified in Subsection R315-319-102(b)(1).

(ii) New CCR landfills and new CCR surface impoundments, and any lateral expansion of a CCR unit. No later than the date of the initial receipt of CCR in the CCR unit, the owner or operator shall prepare an initial written closure plan consistent with the requirements specified in Subsection R315-319-102(b)(1).

(iii) The owner or operator has completed the written closure plan when the plan, including the certification required by Subsection R315-319-102(b)(4), has been placed in the facility's operating record as required by Subsection R315-319-105(i)(4).

(3) Amendment of a written closure plan.

(i) The owner or operator may amend the initial or any subsequent written closure plan developed pursuant to Subsection R315-319-102 (b)(1) at any time.

(ii) The owner or operator shall amend the written closure plan whenever:

(A) There is a change in the operation of the CCR unit that would substantially affect the written closure plan in effect; or

(B) Before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

(iii) The owner or operator shall amend the closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR unit, the owner or operator shall amend the current closure plan no later than 30 days following the triggering event.

(4) The owner or operator of the CCR unit shall obtain a written certification from a qualified professional engineer that the initial and any amendment of the written closure plan meets the requirements of Section R315-319-102.

(c) Closure by removal of CCR. An owner or operator may elect to close a CCR unit by removing and decontaminating all areas affected by releases from the CCR unit. CCR removal and decontamination of the CCR unit are complete when constituent concentrations throughout the CCR unit and any areas affected by releases from the CCR unit have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to Subsection R315-319-95(h) for constituents listed in appendix IV to Rule R315-319.

(d) Closure performance standard when leaving CCR in place

(1) The owner or operator of a CCR unit shall ensure that, at a minimum, the CCR unit is closed in a manner that will:

(i) Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere;

(ii) Preclude the probability of future impoundment of water, sediment, or slurry;

(iii) Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period;

(iv) Minimize the need for further maintenance of the CCR unit; and

(v) Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

(2) Drainage and stabilization of CCR surface impoundments. The owner or operator of a CCR surface impoundment or any lateral expansion of a CCR surface impoundment shall meet the requirements of Subsections R315-319-102(d)(2)(i) and (ii) prior to installing the final cover system required under Subsection R315-319-102(d)(3).

(i) Free liquids shall be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues.

(ii) Remaining wastes shall be stabilized sufficient to support the final cover system.

(3) Final cover system. If a CCR unit is closed by leaving CCR in place, the owner or operator shall install a final cover system that is designed to minimize infiltration and erosion, and at a minimum, meets the requirements of Subsection R315-319-102(d)(3)(i), or the requirements of the alternative final cover system specified in Subsection R315-319-102(d)(3)(ii).

(i) The final cover system shall be designed and constructed to meet the criteria in Subsections R315-319-102(d)(3)(i)(A) through (D). The design of the final cover system shall be included in the written closure plan required by Subsection R315-319-102(b).

(A) The permeability of the final cover system shall be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1 x 10-5 cm/sec, whichever is less.

(B) The infiltration of liquids through the closed CCR unit shall be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material.

(C) The erosion of the final cover system shall be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.

(D) The disruption of the integrity of the final cover system shall be minimized through a design that accommodates settling and subsidence.

(ii) The owner or operator may select an alternative final cover system design, provided the alternative final cover system is designed and constructed to meet the criteria in Subsections R315-319-102(f)(3)(ii)(A) through (D). The design of the final cover system shall be included in the written closure plan required by Subsection R315-319-102(b).

(A) The design of the final cover system shall include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in Subsections R315-319-102(d)(3)(i)(A) and (B).

(B) The design of the final cover system shall include an erosion layer that provides equivalent protection from wind or water erosion as the erosion layer specified in Subsection R315-319-102(d)(3)(i)(C).

(C) The disruption of the integrity of the final cover system shall be minimized through a design that accommodates settling and subsidence.

(iii) The owner or operator of the CCR unit shall obtain a written certification from a qualified professional engineer that the design of the final cover system meets the requirements of Section R315-319-102.

(e) Initiation of closure activities. Except as provided for in Subsection R315-319-102(e)(4) and Section R315-319-103, the owner or operator of a CCR unit shall commence closure of the CCR unit no later than the applicable timeframes specified in either Subsection R315-319-102(e)(1) or (2).

(1) The owner or operator shall commence closure of the CCR unit no later than 30 days after the date on which the CCR unit either:

(i) Receives the known final receipt of waste, either CCR or any non-CCR waste stream; or

(ii) Removes the known final volume of CCR from the CCR unit for the purpose of beneficial use of CCR.

(2)(i) Except as provided by Subsection R315-319-102(e)(2)(ii), the owner or operator shall commence closure of a CCR unit that has not received CCR or any non-CCR waste stream or is no longer removing CCR for the purpose of beneficial use within two years of the last receipt of waste or within two years of the last removal of CCR material for the purpose of beneficial use.

(ii) Notwithstanding Subsection R315-319-102(e)(2)(i), the owner or operator of the CCR unit may secure an additional two years to initiate closure of the idle unit provided the owner or operator provides written documentation that the CCR unit will continue to accept wastes or will start removing CCR for the purpose of beneficial use. The documentation shall be supported by, at a minimum, the information specified in Subsections R315-319-102(e)(2)(ii)(A) and (B). The owner or operator may obtain two-year extensions provided the owner or operator continues to be able to demonstrate that there is reasonable likelihood that the CCR unit will accept wastes in the foreseeable future or will remove CCR from the unit for the purpose of beneficial use. The owner or operator shall place each completed demonstration, if more than one time extension is sought, in the facility's operating record as required by Subsection R315-319-105(i)(5) prior to the end of any two-year period.

(A) Information documenting that the CCR unit has remaining storage or disposal capacity or that the CCR unit can have CCR removed for the purpose of beneficial use; and

(B) Information demonstrating that that there is a reasonable likelihood that the CCR unit will resume receiving CCR or non-CCR waste streams in the foreseeable future or that CCR can be removed for the purpose of beneficial use. The narrative shall include a best estimate as to when the CCR unit will resume receiving CCR or non-CCR waste streams. The situations listed in Subsections R315-319-102(e)(2)(ii)(B)(1) through (4) are examples of situations that would support a determination that the CCR unit will resume receiving CCR or non-CCR waste streams in the foreseeable future.

(1) Normal plant operations include periods during which the CCR unit does not receive CCR or non-CCR waste streams, such as the alternating use of two or more CCR units whereby at any point in time one CCR unit is receiving CCR while CCR is being removed from a second CCR unit after its dewatering.

(2) The CCR unit is dedicated to a coal-fired boiler unit that is temporarily idled, e.g., CCR is not being generated, and there is a reasonable likelihood that the coal-fired boiler will resume operations in the future.

(3) The CCR unit is dedicated to an operating coal-fired boiler, i.e., CCR is being generated; however, no CCR are being placed in the CCR unit because the CCR are being entirely diverted to beneficial uses, but there is a reasonable likelihood that the CCR unit will again be used in the foreseeable future.

(4) The CCR unit currently receives only non-CCR waste streams and those non-CCR waste streams are not generated for an extended period of time, but there is a reasonable likelihood that the CCR unit will again receive non-CCR waste streams in the future.

(iii) In order to obtain additional time extension(s) to initiate closure of a CCR unit beyond the two years provided by Subsection R315-319-102(e)(2)(i), the owner or operator of the CCR unit shall include with the demonstration required by Subsection R315-319-102(e)(2)(ii) the following statement signed by the owner or operator or an authorized representative:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(3) For purposes of Sections R315-319-50 through 107, closure of the CCR unit has commenced if the owner or operator has ceased placing waste and completes any of the following actions or activities:

(i) Taken any steps necessary to implement the written closure plan required by Subsection R315-319-102(b);

(ii) Submitted a completed application for any required state or agency permit or permit modification; or

(iii) Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR unit.

(4) The timeframes specified in Subsections R315-319-102(e)(1) and (2) do not apply to any of the following owners or operators:

(i) An owner or operator of an inactive CCR surface impoundment closing the CCR unit as required by Subsection R315-319-100(b);

(ii) An owner or operator of an existing unlined CCR surface impoundment closing the CCR unit as required by Subsection R315-319-101(a);

(iii) An owner or operator of an existing CCR surface impoundment closing the CCR unit as required by Subsection R315-319-101(b);

(iv) An owner or operator of a new CCR surface impoundment closing the CCR unit as required by Subsection R315-319-101(c); or

(v) An owner or operator of an existing CCR landfill closing the CCR unit as required by Subsection R315-319-101(d).

(f) Completion of closure activities.

(1) Except as provided for in Subsection R315-319-102(f)(2), the owner or operator shall complete closure of the CCR unit:

(i) For existing and new CCR landfills and any lateral expansion of a CCR landfill, within six months of commencing closure activities.

(ii) For existing and new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, within five years of commencing closure activities.

(2)(i) Extensions of closure timeframes. The timeframes for completing closure of a CCR unit specified under Subsection R315-319-102(f)(1) may be extended if the owner or operator can demonstrate that it was not feasible to complete closure of the CCR unit within the required timeframes due to factors beyond the facility's control. If the owner or operator is seeking a time extension beyond the time specified in the written closure plan as required by Subsection R315-319-102(b)(1), the demonstration shall include a narrative discussion providing the basis for additional time beyond that specified in the closure plan. The owner or operator shall place each completed demonstration, if more than one time extension is sought, in the facility's operating record as required by Subsection R315-319-105(i)(6) prior to the end of any two-year period. Factors that may support such a demonstration include:

(A) Complications stemming from the climate and weather, such as unusual amounts of precipitation or a significantly shortened construction season;

(B) Time required to dewater a surface impoundment due to the volume of CCR contained in the CCR unit or the characteristics of the CCR in the unit;

(C) The geology and terrain surrounding the CCR unit will affect the amount of material needed to close the CCR unit; or

(D) Time required or delays caused by the need to coordinate with and obtain necessary approvals and permits from a state or other agency.

(ii) Maximum time extensions.

(A) CCR surface impoundments of 40 acres or smaller may extend the time to complete closure by no longer than two years.

(B) CCR surface impoundments larger than 40 acres may extend the timeframe to complete closure of the CCR unit multiple times, in two-year increments. For each two-year extension sought, the owner or operator shall substantiate the factual circumstances demonstrating the need for the extension. No more than a total of five two-year extensions may be obtained for any CCR surface impoundment.

(C) CCR landfills may extend the timeframe to complete closure of the CCR unit multiple times, in one-year increments. For each one-year extension sought, the owner or operator shall substantiate the factual circumstances demonstrating the need for the extension. No more than a total of two one-year extensions may be obtained for any CCR landfill.

(iii) In order to obtain additional time extension(s) to complete closure of a CCR unit beyond the times provided by Subsection R315-319-102(f)(1), the owner or operator of the CCR unit shall include with the demonstration required by Subsection R315-319-102(f)(2)(i) the following statement signed by the owner or operator or an authorized representative:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(3) Upon completion, the owner or operator of the CCR unit shall obtain a certification from a qualified professional engineer verifying that closure has been completed in accordance with the closure plan specified in Subsection R315-319-102(b) and the requirements of Section R315-319-102.

(g) No later than the date the owner or operator initiates closure of a CCR unit, the owner or operator shall prepare a notification of intent to close a CCR unit. The notification shall include the certification by a qualified professional engineer for the design of the final cover system as required by Subsection R315-319-102(d)(3)(iii), if applicable. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by Subsection R315-319-105(i)(7).

(h) Within 30 days of completion of closure of the CCR unit, the owner or operator shall prepare a notification of closure of a CCR unit. The notification shall include the certification by a qualified professional engineer as required by Subsection R315-319-102(f)(3). The owner or operator has completed the notification when it has been placed in the facility's operating record as required by Subsection R315-319-105(i)(8).

(i) Deed notations.

(1) Except as provided by Subsection R315-319-102(i)(4), following closure of a CCR unit, the owner or operator shall record a notation on the deed to the property, or some other instrument that is normally examined during title search.

(2) The notation on the deed shall in perpetuity notify any potential purchaser of the property that:

(i) The land has been used as a CCR unit; and

(ii) Its use is restricted under the post-closure care requirements as provided by Subsection R315-319-104(d)(1)(iii).

(3) Within 30 days of recording a notation on the deed to the property, the owner or operator shall prepare a notification stating that the notation has been recorded. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by Subsection R315-319-105(i)(9).

(4) An owner or operator that closes a CCR unit in accordance with Subsection R315-319-102(c) is not subject to the requirements of Subsections R315-319-102(i)(1) through (3).

(j) The owner or operator of the CCR unit shall comply with the closure recordkeeping requirements specified in Subsection R315-319-105(i), the closure notification requirements specified in Subsection R315-319-106(i), and the closure Internet requirements specified in Subsection R315-319-107(i).

(k) Criteria to retrofit an existing CCR surface impoundment.

(1) To retrofit an existing CCR surface impoundment, the owner or operator shall:

(i) First remove all CCR, including any contaminated soils and sediments from the CCR unit; and

(ii) Comply with the requirements in Subsection R315-319-72.

(iii) A CCR surface impoundment undergoing a retrofit remains subject to all other requirements of Sections R315-319-50 through 107, including the requirement to conduct any necessary corrective action.

(2) Written retrofit plan

(i) Content of the plan. The owner or operator shall prepare a written retrofit plan that describes the steps necessary to retrofit the CCR unit consistent with recognized and generally accepted good engineering practices. The written retrofit plan shall include, at a minimum, all of the following information:

(A) A narrative description of the specific measures that will be taken to retrofit the CCR unit in accordance with Section R315-319-102.

(B) A description of the procedures to remove all CCR and contaminated soils and sediments from the CCR unit.

(C) An estimate of the maximum amount of CCR that will be removed as part of the retrofit operation.

(D) An estimate of the largest area of the CCR unit that will be affected by the retrofit operation.

(E) A schedule for completing all activities necessary to satisfy the retrofit criteria in Section R315-319-102, including an estimate of the year in which retrofit activities of the CCR unit will be completed.

(ii) Timeframes for preparing the initial written retrofit plan.

(A) No later than 60 days prior to date of initiating retrofit activities, the owner or operator shall prepare an initial written retrofit plan consistent with the requirements specified in Subsection R315-319-102(k)(2). For purposes of Sections R315-319-50 through 107, initiation of retrofit activities has commenced if the owner or operator has ceased placing waste in the unit and completes any of the following actions or activities:

(1) Taken any steps necessary to implement the written retrofit plan; and

(2) Submitted a completed application for a permit or permit modification.

(B) The owner or operator has completed the written retrofit plan when the plan, including the certification required by Subsection R315-319-102(k)(2)(iv), has been placed in the facility's operating record as required by Subsection R315-319-105(j)(1).

(iii) Amendment of a written retrofit plan.

(A) The owner or operator may amend the initial or any subsequent written retrofit plan at any time.

(B) The owner or operator shall amend the written retrofit plan whenever:

(1) There is a change in the operation of the CCR unit that would substantially affect the written retrofit plan in effect; or

(2) Before or after retrofit activities have commenced, unanticipated events necessitate a revision of the written retrofit plan.

(C) The owner or operator shall amend the retrofit plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the revision of an existing written retrofit plan. If a written retrofit plan is revised after retrofit activities have commenced for a CCR unit, the owner or operator shall amend the current retrofit plan no later than 30 days following the triggering event.

(iv) The owner or operator of the CCR unit shall obtain a written certification from a qualified professional engineer that the activities outlined in the written retrofit plan, including any amendment of the plan, meet the requirements of Section R315-319-102.

(3) Deadline for completion of activities related to the retrofit of a CCR unit. Any CCR surface impoundment that is being retrofitted shall complete all retrofit activities within the same time frames and procedures specified for the closure of a CCR surface impoundment in Subsection R315-319-102(f) or, where applicable, Subsection R315-319-103.

(4) Upon completion, the owner or operator shall obtain a certification from a qualified professional engineer verifying that the retrofit activities have been completed in accordance with the retrofit plan specified in Subsection R315-319-102(k)(2) and the requirements of Section R315-319-102.

(5) No later than the date the owner or operator initiates the retrofit of a CCR unit, the owner or operator shall prepare a notification of intent to retrofit a CCR unit. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by Subsection R315-319-105(j)(5).

(6) Within 30 days of completing the retrofit activities specified in Subsection R315-319-102(k)(1), the owner or operator shall prepare a notification of completion of retrofit activities. The notification shall include the certification by a qualified professional engineer as required by Subsection R315-319-102 (k)(4). The owner or operator has completed the notification when it has been placed in the facility's operating record as required by Subsection R315-319-105(j)(6).

(7) At any time after the initiation of a CCR unit retrofit, the owner or operator may cease the retrofit and initiate closure of the CCR unit in accordance with the requirements of Subsection R315-319-102.

(8) The owner or operator of the CCR unit shall comply with the retrofit recordkeeping requirements specified in Subsection R315-319-105(j), the retrofit notification requirements specified in Subsection R315-319-106(j), and the retrofit Internet requirements specified in Subsection R315-319-107(j).

R315-319-103. Closure and Post-Closure Care - Alternative Closure Requirements.

The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is subject to closure pursuant to Subsection R315-319-101(a), (b)(1), or (d) may continue to receive CCR in the unit provided the owner or operator meets the requirements of either Subsection R315-319-103(a) or (b).

(a)(1) No alternative CCR disposal capacity. Notwithstanding the provisions of Subsection R315-319-101(a), (b)(1), or (d), a CCR unit may continue to receive CCR if the owner or operator of the CCR unit certifies that the CCR shall continue to be managed in that CCR unit due to the absence of alternative disposal capacity both on-site and off-site of the facility. To qualify under Subsection R315-

319-103(a)(1), the owner or operator of the CCR unit shall document that all of the following conditions have been met:

(i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under Section R315-319-103;

(ii) The owner or operator has made, and continues to make, efforts to obtain additional capacity. Qualification under this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator shall arrange to use such capacity as soon as feasible;

(iii) The owner or operator shall remain in compliance with all other requirements of Sections R315-319-50 through 107, including the requirement to conduct any necessary corrective action; and

(iv) The owner or operator shall prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative CCR disposal capacity.

(2) Once alternative capacity is available, the CCR unit shall cease receiving CCR and initiate closure following the timeframes in Subsections R315-319-102(e) and (f).

(3) If no alternative capacity is identified within five years after the initial certification, the CCR unit shall cease receiving CCR and close in accordance with the timeframes in Subsections R315-319-102(e) and (f).

(b)(1) Permanent cessation of a coal-fired boiler(s) by a date certain. Notwithstanding the provisions of Subsections R315-319-101(a), (b)(1), and (d), a CCR unit may continue to receive CCR if the owner or operator certifies that the facility will cease operation of the coal-fired boilers within the timeframes specified in Subsections R315-319-103(b)(2) through (4), but in the interim period, prior to closure of the coal-fired boiler, the facility shall continue to use the CCR unit due to the absence of alternative disposal capacity both on-site and off-site of the facility. To qualify under this Subsection R315-319-103(b)(1), the owner or operator of the CCR unit shall document that all of the following conditions have been met:

(i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under Section R315-319-103.

(ii) The owner or operator shall remain in compliance with all other requirements of Sections R315-319-50 through 107, including the requirement to conduct any necessary corrective action; and

(iii) The owner or operator shall prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the closure of the coal-fired boiler.

(2) For a CCR surface impoundment that is 40 acres or smaller, the coal-fired boiler shall cease operation and the CCR surface impoundment shall have completed closure no later than October 17, 2023.

(3) For a CCR surface impoundment that is larger than 40 acres, the coal-fired boiler shall cease operation, and the CCR surface impoundment shall complete closure no later than October 17, 2028.

(4) For a CCR landfill, the coal-fired boiler shall cease operation, and the CCR landfill shall complete closure no later than April 19, 2021.

(c) Required notices and progress reports. An owner or operator of a CCR unit that closes in accordance with Subsection R315-319-103(a) or (b) shall complete the notices and progress reports specified in Subsections R315-319-103(c)(1) through (3).

(1) Within six months of becoming subject to closure pursuant to Subsection R315-319-101(a), (b)(1), or (d), the owner or operator shall prepare and place in the facility's operating record a notification of intent to comply with the alternative closure requirements of Section R315-319-103. The notification shall describe why the CCR unit qualifies for the alternative closure provisions under either Subsection R315-319-103(a) or (b), in addition to providing the documentation and certifications required by Subsection R315-319-103(a) or (b).

(2) The owner or operator shall prepare the periodic progress reports required by Subsection R315-319-103(a)(1)(iv) or (b)(1)(iii), in addition to describing any problems encountered and a description of the actions taken to resolve the problems. The annual progress reports shall be completed according to the following schedule:

(i) The first annual progress report shall be prepared no later than 13 months after completing the notification of intent to comply with the alternative closure requirements required by Subsection R315-319-103(c)(1).

(ii) The second annual progress report shall be prepared no later than 12 months after completing the first annual progress report. Additional annual progress reports shall be prepared within 12 months of completing the previous annual progress report.

(iii) The owner or operator has completed the progress reports specified in Subsection R315-319-103(c)(2) when the reports are placed in the facility's operating record as required by Subsection R315-319-105(i)(10).

(3) An owner or operator of a CCR unit shall also prepare the notification of intent to close a CCR unit as required by Subsection R315-319-102(g).

(d) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-105(i), the notification requirements specified in Subsection R315-319-106(i), and the Internet requirements specified in Subsection R315-319-107(i).

R315-319-104. Closure and Post-Closure Care - Post-Closure Care Requirements.

(a) Applicability.

(1) Except as provided by either Subsection R315-319-104(a)(2) or (3), Section R315-319-104 applies to the owners or operators of CCR landfills, CCR surface impoundments, and all lateral expansions of CCR units that are subject to the closure criteria under Section R315-319-102.

(2) An owner or operator of a CCR unit that elects to close a CCR unit by removing CCR as provided by Subsection R315-319-

102(c) is not subject to the post-closure care criteria under Section R315-319-104.

(3) An owner or operator of an inactive CCR surface impoundment that elects to close a CCR unit pursuant to the requirements under Subsection R315-319-100(b) is not subject to the post-closure care criteria under Section R315-319-104.

(b) Post-closure care maintenance requirements. Following closure of the CCR unit, the owner or operator shall conduct post-closure care for the CCR unit, which shall consist of at least the following:

(1) Maintaining the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

(2) If the CCR unit is subject to the design criteria under Section R315-319-70, maintaining the integrity and effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements of Section R315-319-70; and

(3) Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of Sections R315-319-90 through 98.

(c) Post-closure care period.

(1) Except as provided by Subsection R315-319-104(c)(2), the owner or operator of the CCR unit shall conduct post-closure care for 30 years.

(2) If at the end of the post-closure care period the owner or operator of the CCR unit is operating under assessment monitoring in accordance with Section R315-319-95, the owner or operator shall continue to conduct post-closure care until the owner or operator returns to detection monitoring in accordance with Section R315-319-95.

(d) Written post-closure plan

(1) Content of the plan. The owner or operator of a CCR unit shall prepare a written post-closure plan and any amendments to the plan. The plan shall include, at a minimum, the information specified in Subsections R315-319-104(d)(1)(i) through (iii).

(i) A description of the monitoring and maintenance activities required in Subsection R315-319-104(b) for the CCR unit, and the frequency at which these activities will be performed;

(ii) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period; and

(iii) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in Sections R315-319-50 through 107. Any other disturbance is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration shall be certified by a qualified professional engineer, and notification shall be provided to the Director that the demonstration has been placed in the operating record and on the owners or operator's publicly accessible Internet site.

(2) Deadline to prepare the initial written post-closure plan

(i) Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2016, the owner or operator of the CCR unit shall prepare an initial written post-closure plan consistent with the requirements specified in Subsection R315-319-104(d)(1).

(ii) New CCR landfills, new CCR surface impoundments, and any lateral expansion of a CCR unit. No later than the date of the initial receipt of CCR in the CCR unit, the owner or operator shall prepare an initial written post-closure plan consistent with the requirements specified in Subsection R315-319-104(d)(1).

(iii) The owner or operator has completed the written post-closure plan when the plan, including the certification required by Subsection R315-319-104(d)(4), has been placed in the facility's operating record as required by Subsection R315-319-105(i)(4).

(3) Amendment of a written post-closure plan.

(i) The owner or operator may amend the initial or any subsequent written post-closure plan developed pursuant to Subsection R315-319-104(d)(1) at any time.

(ii) The owner or operator shall amend the written closure plan whenever:

(A) There is a change in the operation of the CCR unit that would substantially affect the written post-closure plan in effect; or

(B) After post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.

(iii) The owner or operator shall amend the written post-closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written post-closure plan. If a written post-closure plan is revised after post-closure activities have commenced for a CCR unit, the owner or operator shall amend the written post-closure plan no later than 30 days following the triggering event.

(4) The owner or operator of the CCR unit shall obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post-closure plan meets the requirements of Section R315-319-104.

(e) Notification of completion of post-closure care period. No later than 60 days following the completion of the post-closure care period, the owner or operator of the CCR unit shall prepare a notification verifying that post-closure care has been completed. The notification shall include the certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with the closure plan specified in Subsection R315-319-104(d) and the requirements of Section R315-319-104. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by Subsection R315-319-105(i)(13).

(f) The owner or operator of the CCR unit shall comply with the recordkeeping requirements specified in Subsection R315-319-

105(i), the notification requirements specified in Subsection R315-319-106(i), and the Internet requirements specified in Subsection R315-319-107(i).

R315-319-105. Recordkeeping, Notification, and Posting of Information to the Internet - Recordkeeping Requirements.

(a) Each owner or operator of a CCR unit subject to the requirements of Sections R315-319-50 through 107 shall maintain files of all information required by Section R315-319-105 in a written operating record at their facility.

(b) Unless specified otherwise, each file shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record, or study.

(c) An owner or operator of more than one CCR unit subject to the provisions of Sections R315-319-50 through 107 may comply with the requirements of Section R315-319-105 in one recordkeeping system provided the system identifies each file by the name of each CCR unit. The files may be maintained on microfilm, on a computer, on computer disks, on a storage system accessible by a computer, on magnetic tape disks, or on microfiche.

(d) The owner or operator of a CCR unit shall submit to the Director any demonstration or documentation required by Sections R315-319-50 through 107.

(e) Location restrictions. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall place the demonstrations documenting whether or not the CCR unit is in compliance with the requirements under Subsections R315-319-60(a), 61(a), 62(a), 63(a), and 64(a), as it becomes available, in the facility's operating record.

(f) Design criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall place the following information, as it becomes available, in the facility's operating record:

(1) The design and construction certifications as required by Subsections R315-319-70(e) and (f).

(2) The documentation of liner type as required by Subsection R315-319-71(a).

(3) The design and construction certifications as required by Subsections R315-319-72(c) and (d).

(4) Documentation prepared by the owner or operator stating that the permanent identification marker was installed as required by Subsections R315-319-73(a)(1) and 74(a)(1).

(5) The initial and periodic hazard potential classification assessments as required by Subsections R315-319-73(a)(2) and 74(a)(2).

(6) The emergency action plan (EAP), and any amendment of the EAP, as required by Subsections R315-319-73(a)(3) and 74(a)(3), except that only the most recent EAP shall be maintained in the facility's operating record irrespective of the time requirement specified in Subsection R315-319-105(b).

(7) Documentation prepared by the owner or operator recording the annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders as required by Subsections R315-319-73(a)(3)(i)(E) and 74(a)(3)(i)(E).

(8) Documentation prepared by the owner or operator recording all activations of the emergency action plan as required by Subsections R315-319-73(a)(3)(v) and 74(a)(3)(v).

(9) The history of construction, and any revisions of it, as required by Subsection R315-319-73(c), except that these files shall be maintained until the CCR unit completes closure of the unit in accordance with Section R315-319-102.

(10) The initial and periodic structural stability assessments as required by Subsections R315-319-73(d) and 74(d).

(11) Documentation detailing the corrective measures taken to remedy the deficiency or release as required by Subsections R315-319-73(d)(2) and 74(d)(2).

(12) The initial and periodic safety factor assessments as required by Subsections R315-319-73(e) and 74(e).

(13) The design and construction plans, and any revisions of it, as required by Subsection R315-319-74(c), except that these files shall be maintained until the CCR unit completes closure of the unit in accordance with Section R315-319-102.

(g) Operating criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall, as it becomes available, place the following information in the facility's operating record:

(1) The CCR fugitive dust control plan, and any subsequent amendment of the plan, required by Subsection R315-319-80(b), except that only the most recent control plan shall be maintained in the facility's operating record irrespective of the time requirement specified in Subsection R315-319-105(b).

(2) The annual CCR fugitive dust control report required by Subsection R315-319-80(c).

(3) The initial and periodic run-on and run-off control system plans as required by Subsection R315-319-81(c).

(4) The initial and periodic inflow design flood control system plan as required by Subsection R315-319-82(c).

(5) Documentation recording the results of each inspection and instrumentation monitoring by a qualified person as required by Subsection R315-319-83(a).

(6) The periodic inspection report as required by Subsection R315-319-83(b)(2).

(7) Documentation detailing the corrective measures taken to remedy the deficiency or release as required by Subsections R315-319-83(b)(5) and 84(b)(5).

(8) Documentation recording the results of the weekly inspection by a qualified person as required by Subsection R315-319-84(a).

(9) The periodic inspection report as required by Subsection R315-319-84(b)(2).

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall, as it becomes available, place the following information in the facility's operating record:

(1) The annual groundwater monitoring and corrective action report as required by Subsection R315-319-90(e).

(2) Documentation of the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices as required by Subsection R315-319-91(e)(1).

(3) The groundwater monitoring system certification as required by Subsection R315-319-91(f).

(4) The selection of a statistical method certification as required by Subsection R315-319-93(f)(6).

(5) Within 30 days of establishing an assessment monitoring program, the notification as required by Subsection R315-319-94(e)(3).

(6) The results of appendices III and IV to Rule R315-319 constituent concentrations as required by Subsection R315-319-95(d)(1).

(7) Within 30 days of returning to a detection monitoring program, the notification as required by Subsection R315-319-95(e).

(8) Within 30 days of detecting one or more constituents in appendix IV to Rule R315-319 at statistically significant levels above the groundwater protection standard, the notifications as required by Subsection R315-319-95(g).

(9) Within 30 days of initiating the assessment of corrective measures requirements, the notification as required by Subsection R315-319-95(g)(5).

(10) The completed assessment of corrective measures as required by Subsection R315-319-96(d).

(11) Documentation prepared by the owner or operator recording the public meeting for the corrective measures assessment as required by Subsection R315-319-96(e).

(12) The semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report as required by Subsection R315-319-97(a), except that the selection of remedy report shall be maintained until the remedy has been completed.

(13) Within 30 days of completing the remedy, the notification as required by Subsection R315-319-98(e).

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall, as it becomes available, place the following information in the facility's operating record:

(1) The notification of intent to initiate closure of the CCR unit as required by Subsection R315-319-100(c)(1).

(2) The annual progress reports of closure implementation as required by Subsections R315-319-100(c)(2)(i) and (ii).

(3) The notification of closure completion as required by Subsection R315-319-100(c)(3).

(4) The written closure plan, and any amendment of the plan, as required by Subsection R315-319-102(b), except that only the most recent closure plan shall be maintained in the facility's operating record irrespective of the time requirement specified in Subsection R315-319-105(b).

(5) The written demonstration(s), including the certification required by Subsection R315-319-102(e)(2)(iii), for a time extension for initiating closure as required by Subsection R315-319-102(e)(2)(ii).

(6) The written demonstration(s), including the certification required by Subsection R315-319-102(f)(2)(iii), for a time extension for completing closure as required by Subsection R315-319-102(f)(2)(i).

(7) The notification of intent to close a CCR unit as required by Subsection R315-319-102(g).

(8) The notification of completion of closure of a CCR unit as required by Subsection R315-319-102(h).

(9) The notification recording a notation on the deed as required by Subsection R315-319-102(i).

(10) The notification of intent to comply with the alternative closure requirements as required by Subsection R315-319-103(c)(1).

(11) The annual progress reports under the alternative closure requirements as required by Subsection R315-319-103(c)(2).

(12) The written post-closure plan, and any amendment of the plan, as required by Subsection R315-319-104(d), except that only the most recent closure plan shall be maintained in the facility's operating record irrespective of the time requirement specified in Subsection R315-319-105(b).

(13) The notification of completion of post-closure care period as required by Subsection R315-319-104(e).

(j) Retrofit criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall, as it becomes available, place the following information in the facility's operating record:

(1) The written retrofit plan, and any amendment of the plan, as required by Subsection R315-319-102(k)(2), except that only the most recent retrofit plan shall be maintained in the facility's operating record irrespective of the time requirement specified in Subsection R315-319-105 (b).

(2) The notification of intent that the retrofit activities will proceed in accordance with the alternative procedures in Subsection R315-319-103.

(3) The annual progress reports required under the alternative requirements as required by Subsection R315-319-103.

(4) The written demonstration(s), including the certification in Subsection R315-319-102(f)(2)(iii), for a time extension for completing retrofit activities as required by Subsection R315-319-102(k)(3).

(5) The notification of intent to initiate retrofit of a CCR unit as required by Subsection R315-319-102(k)(5).

(6) The notification of completion of retrofit activities as required by Subsection R315-319-102(k)(6).

R315-319-106. Recordkeeping, Notification, and Posting of Information to the Internet Notification Requirements.

(a) The notifications required under Subsections R315-319-106(e) through (i) shall be sent to the Director before the close of business on the day the notification is required to be completed. For purposes of Section R315-319-106, before the close of business means the notification shall be postmarked or sent by electronic mail (email). If a notification deadline falls on a weekend or federal holiday, the notification deadline is automatically extended to the next business day.

(b) Reserved

(c) Notifications may be combined as long as the deadline requirement for each notification is met.

(d) Unless otherwise required in Section R315-319-106, the notifications specified in Section R315-319-106 shall be sent to the Director within 30 days of placing in the operating record the information required by Subsection R315-319-105.

(e) Location restrictions. The owner or operator of a CCR unit subject to the requirements of Sections R315-319-50 through 107 shall notify the Director that each demonstration specified under Subsection R315-319-105(e) has been placed in the operating record and on the owner or operator's publicly accessible internet site.

(f) Design criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible Internet site. The owner or operator shall:

(1) Within 60 days of commencing construction of a new CCR unit, provide notification of the availability of the design certification specified under Subsection R315-319-105(f)(1) or (3). If the owner or operator of the CCR unit elects to install an alternative composite liner, the owner or operator shall also submit to the Director a copy of the alternative composite liner design.

(2) No later than the date of initial receipt of CCR by a new CCR unit, provide notification of the availability of the construction certification specified under Subsection R315-319-105(f)(1) or (3).

(3) Provide notification of the availability of the documentation of liner type specified under Subsection R315-319-105(f)(2).

(4) Provide notification of the availability of the initial and periodic hazard potential classification assessments specified under Subsection R315-319-105(f)(5).

(5) Provide notification of the availability of emergency action plan (EAP), and any revisions of the EAP, specified under Subsection R315-319-105(f)(6).

(6) Provide notification of the availability of documentation prepared by the owner or operator recording the annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders specified under Subsection R315-319-105(f)(7).

(7) Provide notification of documentation prepared by the owner or operator recording all activations of the emergency action plan specified under Subsection R315-319-105(f)(8).

(8) Provide notification of the availability of the history of construction, and any revision of it, specified under Subsection R315-319-105(f)(9).

(9) Provide notification of the availability of the initial and periodic structural stability assessments specified under Subsection R315-319-105(f)(10).

(10) Provide notification of the availability of the documentation detailing the corrective measures taken to remedy the deficiency or release specified under Subsection R315-319-105(f)(11).

(11) Provide notification of the availability of the initial and periodic safety factor assessments specified under Subsection R315-319-105(f)(12).

(12) Provide notification of the availability of the design and construction plans, and any revision of them, specified under Subsection R315-319-105(f)(13).

(g) Operating criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible Internet site. The owner or operator shall:

(1) Provide notification of the availability of the CCR fugitive dust control plan, or any subsequent amendment of the plan, specified under Subsection R315-319-105(g)(1).

(2) Provide notification of the availability of the annual CCR fugitive dust control report specified under Subsection R315-319-105(g)(2).

(3) Provide notification of the availability of the initial and periodic run-on and run-off control system plans specified under Subsection R315-319-105(g)(3).

(4) Provide notification of the availability of the initial and periodic inflow design flood control system plans specified under Subsection R315-319-105(g)(4).

(5) Provide notification of the availability of the periodic inspection reports specified under Subsection R315-319-105(g)(6).

(6) Provide notification of the availability of the documentation detailing the corrective measures taken to remedy the deficiency or release specified under Subsection R315-319-105(g)(7).

(7) Provide notification of the availability of the periodic inspection reports specified under Subsection R315-319-105(g)(9).

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible Internet site. The owner or operator shall:

(1) Provide notification of the availability of the annual groundwater monitoring and corrective action report specified under Subsection R315-319-105(h)(1).

(2) Provide notification of the availability of the groundwater monitoring system certification specified under Subsection R315-319-105(h)(3).

(3) Provide notification of the availability of the selection of a statistical method certification specified under Subsection R315-319-105(h)(4).

(4) Provide notification that an assessment monitoring programs has been established specified under Subsection R315-319-

105(h)(5).

(5) Provide notification that the CCR unit is returning to a detection monitoring program specified under Subsection R315-319-105(h)(7).

(6) Provide notification that one or more constituents in appendix IV to Rule R315-319 have been detected at statistically significant levels above the groundwater protection standard and the notifications to land owners specified under Subsection R315-319-105(h)(8).

(7) Provide notification that an assessment of corrective measures has been initiated specified under Subsection R315-319-105(h)(9).

(8) Provide notification of the availability of assessment of corrective measures specified under Subsection R315-319-105(h)(10).

(9) Provide notification of the availability of the semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report specified under Subsection R315-319-105(h)(12).

(10) Provide notification of the completion of the remedy specified under Subsection R315-319-105(h)(13).

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible Internet site. The owner or operator shall:

(1) Provide notification of the intent to initiate closure of the CCR unit specified under Subsection R315-319-105(i)(1).

(2) Provide notification of the availability of the annual progress reports of closure implementation specified under Subsection R315-319-105(i)(2).

(3) Provide notification of closure completion specified under Subsection R315-319-105(i)(3).

(4) Provide notification of the availability of the written closure plan, and any amendment of the plan, specified under Subsection R315-319-105(i)(4).

(5) Provide notification of the availability of the demonstration(s) for a time extension for initiating closure specified under Subsection R315-319-105(i)(5).

(6) Provide notification of the availability of the demonstration(s) for a time extension for completing closure specified under Subsection R315-319-105(i)(6).

(7) Provide notification of intent to close a CCR unit specified under Subsection R315-319-105(i)(7).

(8) Provide notification of completion of closure of a CCR unit specified under Subsection R315-319-105(i)(8).

(9) Provide notification of the deed notation as required by Subsection R315-319-105(i)(9).

(10) Provide notification of intent to comply with the alternative closure requirements specified under Subsection R315-319-105(i)(10).

(11) The annual progress reports under the alternative closure requirements as required by Subsection R315-319-105(i)(11).

(12) Provide notification of the availability of the written post-closure plan, and any amendment of the plan, specified under Subsection R315-319-105(i)(12).

(13) Provide notification of completion of post-closure care specified under Subsection R315-319-105(i)(13).

(j) Retrofit criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible Internet site. The owner or operator shall:

(1) Provide notification of the availability of the written retrofit plan, and any amendment of the plan, specified under Subsection R315-319-105(j)(1).

(2) Provide notification of intent to comply with the alternative retrofit requirements specified under Subsection R315-319-105(j)(2).

(3) The annual progress reports under the alternative retrofit requirements as required by Subsection R315-319-105(j)(3).

(4) Provide notification of the availability of the demonstration(s) for a time extension for completing retrofit activities specified under Subsection R315-319-105(j)(4).

(5) Provide notification of intent to initiate retrofit of a CCR unit specified under Subsection R315-319-105(j)(5).

(6) Provide notification of completion of retrofit activities specified under Subsection R315-319-105(j)(6).

R315-319-107. Recordkeeping, Notification, and Posting of Information to the Internet - Publicly Accessible Internet Site Requirements.

(a) Each owner or operator of a CCR unit subject to the requirements of Sections R315-319-50 through 107 shall maintain a publicly accessible Internet site, CCR Web site, containing the information specified in Section R315-319-107. The owner or operator's Web site shall be titled "CCR Rule Compliance Data and Information."

(b) An owner or operator of more than one CCR unit subject to the provisions of Sections R315-319-50 through 107 may comply with the requirements of Section R315-319-107 by using the same Internet site for multiple CCR units provided the CCR Web site clearly delineates information by the name or identification number of each unit.

(c) Unless otherwise required in Section R315-319-107, the information required to be posted to the CCR Web site shall be made available to the public for at least five years following the date on which the information was first posted to the CCR Web site.

(d) Unless otherwise required in Section R315-319-107, the information shall be posted to the CCR Web site within 30 days of placing the pertinent information required by Subsection R315-319-105 in the operating record.

(e) Location restrictions. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall place each

demonstration specified under Subsection R315-319-105(e) on the owner or operator's CCR Web site.

(f) Design criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall place the following information on the owner or operator's CCR Web site:

(1) Within 60 days of commencing construction of a new unit, the design certification specified under Subsection R315-319-105(f)(1) or (3).

(2) No later than the date of initial receipt of CCR by a new CCR unit, the construction certification specified under Subsection R315-319-105(f)(1) or (3).

(3) The documentation of liner type specified under Subsection R315-319-105(f)(2).

(4) The initial and periodic hazard potential classification assessments specified under Subsection R315-319-105(f)(5).

(5) The emergency action plan (EAP) specified under Subsection R315-319-105(f)(6), except that only the most recent EAP shall be maintained on the CCR Web site irrespective of the time requirement specified in Subsection R315-319-107(c).

(6) Documentation prepared by the owner or operator recording the annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders specified under Subsection R315-319-105(f)(7).

(7) Documentation prepared by the owner or operator recording any activation of the emergency action plan specified under Subsection R315-319-105(f)(8).

(8) The history of construction, and any revisions of it, specified under Subsection R315-319-105(f)(9).

(9) The initial and periodic structural stability assessments specified under Subsection R315-319-105(f)(10).

(10) The documentation detailing the corrective measures taken to remedy the deficiency or release specified under Subsection R315-319-105(f)(11).

(11) The initial and periodic safety factor assessments specified under Subsection R315-319-105(f)(12).

(12) The design and construction plans, and any revisions of them, specified under Subsection R315-319-105(f)(13).

(g) Operating criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall place the following information on the owner or operator's CCR Web site:

(1) The CCR fugitive dust control plan, or any subsequent amendment of the plan, specified under Subsection R315-319-105(g)(1) except that only the most recent plan shall be maintained on the CCR Web site irrespective of the time requirement specified in Subsection R315-319-107(c).

(2) The annual CCR fugitive dust control report specified under Subsection R315-319-105(g)(2).

(3) The initial and periodic run-on and run-off control system plans specified under Subsection R315-319-105(g)(3).

(4) The initial and periodic inflow design flood control system plans specified under Subsection R315-319-105(g)(4).

(5) The periodic inspection reports specified under Subsection R315-319-105(g)(6).

(6) The documentation detailing the corrective measures taken to remedy the deficiency or release specified under Subsection R315-319-105(g)(7).

(7) The periodic inspection reports specified under Subsection R315-319-105(g)(9).

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall place the following information on the owner or operator's CCR Web site:

(1) The annual groundwater monitoring and corrective action report specified under Subsection R315-319-105(h)(1).

(2) The groundwater monitoring system certification specified under Subsection R315-319-105(h)(3).

(3) The selection of a statistical method certification specified under Subsection R315-319-105(h)(4).

(4) The notification that an assessment monitoring programs has been established specified under Subsection R315-319-105(h)(5).

(5) The notification that the CCR unit is returning to a detection monitoring program specified under Subsection R315-319-105(h)(7).

(6) The notification that one or more constituents in appendix IV to Rule R315-319 have been detected at statistically significant levels above the groundwater protection standard and the notifications to land owners specified under Subsection R315-319-105(h)(8).

(7) The notification that an assessment of corrective measures has been initiated specified under Subsection R315-319-105(h)(9).

(8) The assessment of corrective measures specified under Subsection R315-319-105(h)(10).

(9) The semiannual reports describing the progress in selecting and designing remedy and the selection of remedy report specified under Subsection R315-319-105(h)(12), except that the selection of the remedy report shall be maintained until the remedy has been completed.

(10) The notification that the remedy has been completed specified under Subsection R315-319-105(h)(13).

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall place the following information on the owner or operator's CCR Web site:

(1) The notification of intent to initiate closure of the CCR unit specified under Subsection R315-319-105(i)(1).

(2) The annual progress reports of closure implementation specified under Subsection R315-319-105(i)(2).

(3) The notification of closure completion specified under Subsection R315-319-105(i)(3).

(4) The written closure plan, and any amendment of the plan, specified under Subsection R315-319-105(i)(4).

(5) The demonstration(s) for a time extension for initiating closure specified under Subsection R315-319-105(i)(5).

(6) The demonstration(s) for a time extension for completing closure specified under Subsection R315-319-105(i)(6).

(7) The notification of intent to close a CCR unit specified under Subsection R315-319-105(i)(7).

(8) The notification of completion of closure of a CCR unit specified under Subsection R315-319-105(i)(8).

(9) The notification recording a notation on the deed as required by Subsection R315-319-105(i)(9).

(10) The notification of intent to comply with the alternative closure requirements as required by Subsection R315-319-105(i)(10).

(11) The annual progress reports under the alternative closure requirements as required by Subsection R315-319-105(i)(11).

(12) The written post-closure plan, and any amendment of the plan, specified under Subsection R315-319-105(i)(12).

(13) The notification of completion of post-closure care specified under Subsection R315-319-105(i)(13).

(j) Retrofit criteria. The owner or operator of a CCR unit subject to Sections R315-319-50 through 107 shall place the following information on the owner or operator's CCR Web site:

(1) The written retrofit plan, and any amendment of the plan, specified under Subsection R315-319-105(j)(1).

(2) The notification of intent to comply with the alternative retrofit requirements as required by Subsection R315-319-105(j)(2).

(3) The annual progress reports under the alternative retrofit requirements as required by Subsection R315-319-105(j)(3).

(4) The demonstration(s) for a time extension for completing retrofit activities specified under Subsection R315-319-105(j)(4).

(5) The notification of intent to retrofit a CCR unit specified under Subsection R315-319-105(j)(5).

(6) The notification of completion of retrofit activities specified under Subsection R315-319-105(j)(6).

R315-319-108. Appendix III to Rule R315-319 - Constituents for Detection Monitoring.

Table

Common name(1)
Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

(1)Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

R315-319-109. Appendix IV to Rule R315-319 - Constituents for Assessment Monitoring.

Table

Common name(1)
Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

(1)Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

KEY: permit, solid waste, coal ash
Date of Enactment or Last Substantive Amendment: September 1, 2016
Authorizing, and Implemented or Interpreted Law: 19-6-108

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
X-ray Registration and Inspection Fee Increases
July 8, 2021

What is the issue before the Board?	In an effort to better serve Utah's x-ray facilities and improve our registration and inspection timeliness, the division is proposing to increase x-ray tube registration and inspection fees.
What is the historical background or context for this issue?	Currently x-ray tube registration fees are $35 per tube. The fee is charged annually. Inspection fees range from $15 for inspections conducted by a qualified expert to $105. The fee is determined by the type of facility being inspected. Inspections are conducted in accordance with frequencies that are set in rule, see R313-16-290. The frequencies are 1, 2, 3, and 5 years. For additional information regarding fees and inspections please visit the X-ray Program Inspections, Registrations, and Fees web page. Fees have not been raised since 2004. Currently the division has two inspectors in the x-ray program but there is a backlog of inspections that are 90-days or more past due. After looking at all options for reducing the backlog the division has determined that it is not possible for two inspectors to keep up with the required inspections. The division needs to hire a third inspector. The x-ray program does not receive general fund money from the legislature and must sustain itself with fees charged. The current fees will not provide enough funding to hire another inspector so the division has determined that a fee increase of $10 per tube and $10 per inspection will provide enough funds to maintain the program and allow for the hiring of another inspector.
What is the governing statutory or regulatory citation?	Utah Code Section 19-3-104 requires the registration of ionizing radiation producing machines and requires the division to assess fees for registration and inspection of these machines.
Is Board action required?	No, this issue is being presented to the Board to inform them that the division is proposing to raise x-ray registration and inspection fees. The division will be holding two stakeholder meetings, a virtual meeting on Tuesday, July 20th from 12:00 PM to 1:30 PM and an in-person meeting on Thursday, July 29th from 11:00 AM to 12:30 PM. Letters informing stakeholders of the proposed fee increase and inviting them to the meetings were sent out the first week of June and notice has been posted on the division main web page and the x-ray program web page.
What is the Division Director's recommendation?	N/A
Where can more information be obtained?	Please contact Tom Ball by email at tball@utah.gov or by phone at (801) 536-0251.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE
Energy*Solutions*, LLC
July 8, 2021

What is the issue before the Board?	On June 16, 2021, Energy*Solutions,* LLC submitted a request to the Director of the Division of Waste Management and Radiation Control for a one-time site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive ash contaminated with dioxins and furans as UHCs for treatment and disposal.
What is the historical background or context for this issue?	EnergySolutions requests approval to receive ash from incinerator and metal recycling processes that contains dibenzo-p-dioxin and dibenzofuran UHCs above their respective treatment standards denoted with the Universal Treatment Standards (UTS) in R315-268-48. All other required treatment standards associated with the waste will be met prior to disposal. Requiring the waste to meet the dioxin and furan treatment standards is inappropriate based on the processes that generate the waste. Because of the waste generation processes, all the ash waste contains dioxins and furans; however, in accordance with regulations, only a portion of the waste needs to be treated for those contaminants. The generator has previously analyzed each container of ash for metals contamination. If metals were below the toxicity characteristic concentrations described in 40 CFR 261.24 (R315-261-24), the waste would be shipped to the Clive facility as Low-Level Radioactive Waste (LLRW) and disposed in the Class A Embankment. If metals were above the Toxicity Characteristic concentrations, then the waste would need treated for those metals as well as all UHCs, including dioxins and furans. It is inappropriate to require treatment of dioxin and furan contaminants in instances where characteristic metals are found in the waste when treatment is not required if metals are below characteristic concentrations in the waste. Furthermore, the stabilized ash was re-incinerated in an attempt to reduce the concentration of dioxins and furans in the ash. Re-incineration resulted in very little reduction in the concentrations. It is inappropriate to require this additional incineration in order to attempt to meet the standards. Final disposal of the waste will occur in the Mixed Waste Disposal Cell at the EnergySolutions Mixed Waste Facility.

	A notice for public comment was published in the *Salt Lake Tribune*, the *Deseret News* and the *Tooele County Transcript Bulletin.* The comment period will begin July 12, 2021 and will end August 10, 2021.
What is the governing statutory or regulatory citation?	Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by R315-268.44 of the Utah Administrative Code.
Is Board action required?	No. This is an informational item before the Board.
What is the Division/Director's recommendation?	The Director will provide a recommendation following the public comment period at the next Board meeting.
Where can more information be obtained?	For technical questions, please contact Tyler Hegburg (801) 536-4271. For legal questions, please contact Bret Randall at (801) 536-0284.

DSHW-2021-009482
Attachment: DSHW-2021-009081

Div of Waste Management
and Radiation Control
JUN 17 2021
DSHW-2021-009081

ENERGYSOLUTIONS

June 16, 2021 CD-2021-072

Mr. Doug Hansen
Director
Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, UT 84114-4880

Subject: EPA ID Number UTD982598898 – Request for a Site-Specific Treatment Variance for Ash with Dioxin/Furan Contamination

Dear Mr. Hansen,

Energy*Solutions* hereby requests a variance from Utah Administrative Code (UAC) R315-268-40(a)(3) for an incinerator ash waste that meets all treatment standards except those for dioxins and furans as Underlying Hazardous Constituents (UHCs). This request is submitted in accordance with the requirements of UAC R315-260-19.

The regulatory requirement authorizing this request is found in UAC R315-268-44 which allows a site-specific variance from an applicable treatment standard provided that the following condition is met:

> *UAC R315-268-44268.44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.*

Energy*Solutions* requests approval to receive ash from incinerator and metal recycling processes that contains dibenzo-p-dioxin and dibenzofuran UHCs above their respective treatment standards denoted with the Universal Treatment Standards (UTS) in R315-268-48. All other required treatment standards associated with the waste will be met prior to disposal.

Requiring the waste to meet the dioxin and furan treatment standards is inappropriate based on the processes that generate the waste. Because of the waste generation processes, all of the ash waste contains dioxins and furans; however, in accordance with regulations, only a portion of the waste needs to be treated for those contaminants. The generator has previously analyzed each container of ash for metals contamination. If metals were below the toxicity characteristic concentrations described in 40 CFR 261.24 (R315-261-24), the waste would be shipped to the Clive facility as Low-Level Radioactive Waste (LLRW) and disposed in the Class A Embankment. If metals were above the Toxicity Characteristic concentrations, then the waste would need treated for those metals as well as all UHCs, including dioxins and furans. It is inappropriate to require treatment of dioxin and furan contaminants in instances where characteristic metals are found in the waste when treatment is not required if metals are below characteristic concentrations in the waste.

Furthermore, prior to receiving this variance, the stabilized ash was re-incinerated in an attempt to reduce the concentration of dioxins and furans in the ash. Re-incineration results in very little

intrinsic value. It is inappropriate to require this additional incineration in order to attempt to meet the standards.

Energy*Solutions* proposes to confirm the waste meets all required treatment standards with the exception of the dioxin and furan UHC standards and then to macroencapsulate the residue in MACRO Vaults using requirements approved in the state-issued Part B Permit. This will provide additional isolation of the waste from the environment (relative to direct disposal in the Class A Embankment) and will avoid unnecessary additional incineration of the waste.

Energy*Solutions* requested this same variance for this generator in letters dated June 27, 2018 (CD18-0120) and August 23, 2019 (CD19-0179). The previous requests were approved by the Waste Management and Radiation Control Board on September 13, 2018 and November 14, 2019, respectively. Over the previous year this variance was in effect, the Energy*Solutions* Clive facility received approximately 49 tons (four shipments) of this ash for treatment. Energy*Solutions* forecasts similar amounts of this waste over the next year.

This variance is being requested for approximately 50 tons of ash that will contain elevated concentrations of dioxins and furans.

Energy*Solutions* requests that a variance be granted to macroencapsulate ash waste that meets all required treatment standards except those for dioxin and furan UHCs.

The name, phone number, and address of the person who should be contacted to notify Energy*Solutions* of decisions by the Director is:

Mr. Vern Rogers
Director of Regulatory Affairs
Energy*Solutions* LLC
299 South Main Street, Suite 1700
Salt Lake City, UT 84111
(801) 649-2000

Should there be any questions to this request, please contact me at (801) 649-2144.

Sincerely,

Timothy L. Orton
Jun 16 2021 2:20 PM
cosign

Timothy L. Orton, P.E.
Environmental Engineer

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
Energy*Solutions*, LLC
Proposed Stipulation and Consent Order No. 2105037
July 8, 2021

What is the issue before the Board?	This is a proposed Stipulation and Consent Order (SCO), No. 2105037, to resolve Notice of Violation (NOV) No. 2007067, issued to Energy*Solutions*, LLC on April 3, 2020.
What is the historical background or context for this issue?	The NOV was based on self-reported violations documented in letters from the facility dated April 27, 2020 and May 1, 2020. The SCO includes a penalty of $51,181.00. Copies of the NOV, the SCO, and the penalty narrative worksheet are included in this Board packet.
What is the governing statutory or regulatory citation?	§19-6-104 of the Utah Solid and Hazardous Waste Act authorizes the Board to issue orders and approve or disapprove settlements negotiated by the Director with a civil penalty over $25,000.
Is Board action required?	No, this is an informational item. A 30-day public comment period is currently underway. Following the comment period, this matter will be brought before the Board for action in a future meeting.
What is the Division Director's recommendation?	N/A
Where can more information be obtained?	For technical information, please contact Otis Willoughby at (801) 536-0220. For legal information, please contact Connie Nakahara at (385) 414-0450.

DSHW-2021-009272
Attachments: DSHW-2020-010824 - Notice of Violation No. 2007067
DSHW-2021-009274 - Proposed Stipulation and Consent Order No. 2105037
DSHW-2021-009276 - Narrative Explanation

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL
Ty L. Howard
Director

August 3, 2020

Vern C. Rogers, Director of Regulatory Affairs
EnergySolutions, LLC
299 South Main Street, Suite 1700
Salt Lake City, UT 84111

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7003 2260 0003 2353 4831

RE: Notice of Violation No. 2007067
UTD982598898

Dear Mr. Rogers:

Enclosed is a **NOTICE OF VIOLATION (NOV)** No. 2007067, based on self-reported non-compliance with Macroencapsulation requirements.

On April 27, 2020 and May 1, 2020, EnergySolutions notified the Division of Waste Management and Radiation Control of issues of non-compliance with conditions of the state-issued Part B permit. Both notifications dealt with MACRO treatment issues conducted between December 2018 and May 2020.

Please be aware that you have 30 days from the date of the attached NOV to contest it in the manner and within the time prescribed by R305-7-303, Utah Admin. Code.

If you have any questions, please call Otis Willoughby at (801) 536-0220.

Sincerely,

Ty L. Howard, Director
Division of Waste Management and Radiation Control

(Over)

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144880 • Salt Lake City, UT 84114-4880
Telephone (801) 536-0200 • Fax (801) 536-0222 • T.D.D. (801) 536-4284
www.deq.utah.gov
Printed on 100% recycled paper

TLH/OHW/ar

Enclosure: NOV No.2007067

c: Jeff Coombs, EHS, Health Officer, Tooele County Health Department
Bryan Slade, Environmental Health Director, Tooele County Health Department
Annette Maxwell, U.S. EPA, Region VIII, ENF-R

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In the Matter of:	:	**NOTICE OF VIOLATION**
	:	
Energy*Solutions*, LLC	:	**No. 2007067**
UTD982598898	:	

---oo0oo---

This **NOTICE OF VIOLATION (NOV)** is issued by the Director of the Division of Waste Management and Radiation Control (Director) pursuant to the Utah Solid and Hazardous Waste Act (the Act), Utah Code § 19-6-101, *et seq.* The Director has authority to issue such NOTICES in accordance with Utah Code § 19-6-112.

FINDINGS

1. Energy*Solutions*, LLC (Energy*Solutions*) is a Limited Liability Company. Energy*Solutions* is the owner and operator of the Clive Mixed Waste Facility.

2. The Clive Mixed Waste Facility is a mixed waste treatment, storage and disposal facility located in Tooele County, Utah. Energy*Solutions* operates the Clive Mixed Waste Facility under the provisions of a state-issued Part B permit.

3. Energy*Solutions* is a "person" as defined in Utah Code § 19-1-103(4) and is subject to all applicable provisions of the Act, the Utah Administrative Code (Rules) and the state-issued Part B permit issued to Energy*Solutions*.

4. On April 27, 2020 and May 1, 2020, Energy*Solutions* notified the Division of Waste Management and Radiation Control of issues of non-compliance with conditions of the state-issued Part B permit.

5. Condition 5.b.iii.B.(12) of Attachment II-1-5 requires a bonding agent be applied to the perimeter surface of the existing floor when a MACRO Vault is constructed on top of an existing MACRO Vault.

   5.01 Contrary to this requirement, bonding agents have not been applied for all MACRO Vaults constructed from December, 2018 to the present.

6. Condition 5.b.iii.M.(3) of Attachment II-1-5 requires each batch ticket be reviewed to ensure the mixture is within tolerances described in the proprietary mix design documentation.

   6.01 During a review of MACRO documentation, it was noted that one batch ticket of Macro Mix that was used for macroencapsulation had a Macro Mix additive that did not meet the ± 1% tolerance requirement; another batch ticket did not identify the actual value for the same additive, so it was unclear if the tolerance was met.

DETERMINATION OF VIOLATIONS

In accordance with Utah Code § 19-6-101, *et seq.*, and based on the foregoing FINDINGS, Energy*Solutions* has violated provisions of the Permit applicable to its facility. Specifically, Energy*Solutions* has violated the following:

1. Permit Condition 5.b.iii.M.(3) of Attachment II-1-5 by failing to apply bonding agents between MACRO Vaults constructed between December 2018 to May 2020.

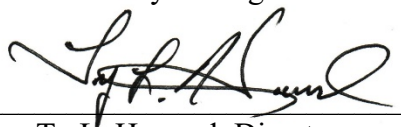
2. Permit Condition 5.b.iii.M.(3) of Attachment II-1-5 by not reviewing batch tickets and using Macro Mix outside of required tolerances.

OPPORTUNITY FOR HEARING

This NOTICE OF VIOLATION is effective immediately and shall become final unless Energy*Solutions* administratively contests it. Failure to contest this NOTICE OF VIOLATION in the manner and within the time period prescribed by Utah Admin. Code R305-7-303 constitutes a waiver of any right of administrative contest, reconsideration, review, or judicial appeal.

Utah Code Section 19-6-113(2) provides that violation of any order, plan, rule, or other requirement issued or adopted under Title 19, Ch. 6, Pt. 1 may be subject to a civil penalty of up to $13,000 per day for each day of violation.

Dated this 3rd day of August 2020.

By: 

Ty L. Howard, Director
Division of Waste Management and Radiation Control

---oo0oo---

In the Matter of:	:	PROPOSED STIPULATION AND CONSENT ORDER
Energy*Solutions*, LLC Notice of Violation No. 2007067 UTD982598898	: :	**No. 2105037**

---oo0oo---

This **STIPULATION AND CONSENT ORDER** (CONSENT ORDER) is issued by the DIRECTOR OF THE UTAH DIVISION OF WASTE MANAGEMENT AND RADIATION CONTROL pursuant to the Utah Solid and Hazardous Waste Act (the Act), Utah Code § 19-6-101, *et seq*.

JURISDICTION

The Director has jurisdiction over the subject matter of this CONSENT ORDER pursuant to Utah Code §§ 19-6-107 and 19-6-112 and jurisdiction over the Clive Mixed Waste Facility owned and operated by Energy*Solutions*, LLC. Energy*Solutions*, LLC consents to and will not challenge issuance of this CONSENT ORDER or the Director's jurisdiction to enter and enforce this CONSENT ORDER. Energy*Solutions*, LLC and the Director are the parties to this CONSENT ORDER. The Waste Management and Radiation Control Board has authority to review and approve or disapprove this CONSENT ORDER pursuant to Utah Code § 19-6-104(1)(e).

FINDINGS

1. Energy*Solutions*, LLC (Energy*Solutions*) is a Limited Liability Company. Energy*Solutions* is the owner and operator of the Clive Mixed Waste Facility.

2. The Clive Mixed Waste Facility is a mixed waste treatment, storage and disposal facility located in Tooele County, Utah. Energy*Solutions* operates the Clive Mixed Waste Facility under the provisions of the State issued Part B Permit ("Permit") originally issued November 30, 1990. The Director renewed and reissued the Permit on April 4, 2003.

3 Energy*Solutions* is a "person" as defined in Utah Code § 19-1-103(4) and is subject to all applicable provisions of the Utah Administrative Code (the Rules), the Act, and the Permit.

4. On April 27, 2020 and May 1, 2020, Energy*Solutions* notified the Division of Waste Management and Radiation Control of issues of non-compliance with conditions of the State issued Part B permit.

5. Based on findings documented in the notifications from EnergySolutions on April 27, 2020 and May 1, 2020, the Director issued Notice of Violation No. 2007067 which alleged violations of the Permit.

6. On August 17, 2020, EnergySolutions filed a written response to the NOV.

7. In accordance with the Civil Penalty Policy, Utah Admin. Code R315-102 of the Rules, which considers such factors as the gravity of the violations, the extent of deviation from the rules, the potential for harm to human health and the environment, good faith efforts to comply, economic benefit of non-compliance, and other factors, the Director calculated and proposed a penalty based on the violations alleged in the NOV No. 2007067.

STIPULATION AND CONSENT ORDER

8. This CONSENT ORDER has been negotiated in good faith and the parties now wish to fully resolve Notice of Violation No. 2007067 without further administrative or judicial proceedings.

9. In full settlement of the violations alleged in NOV No. 2007067, EnergySolutions shall pay a penalty of **$51,181.00** (Fifty-one thousand one hundred eighty-one dollars). Payment shall be made within thirty days of the effective date of this CONSENT ORDER. Payment shall be made to the State of Utah, Department of Environmental Quality, c/o Director, Utah Division of Waste Management and Radiation Control, P.O. Box 144880, Salt Lake City, Utah 84114-4880.

EFFECT OF CONSENT ORDER

10. For the purpose of this CONSENT ORDER, the parties agree and stipulate to the above stated facts. The obligations in this CONSENT ORDER apply to and are binding upon the Division of Waste Management and Radiation Control and upon Energy*Solutions* and any of Energy*Solution*s' successors, assigns, or other entities or persons otherwise bound by law.

11. The stipulations contained herein are for the purposes of settlement and shall not be considered admissions by any party and shall not be used by any person related or unrelated to this CONSENT ORDER for purposes other than determining the basis of this CONSENT ORDER. Nothing contained herein shall be deemed to constitute a waiver by the State of Utah of its right to initiate enforcement action, including civil penalties, against Energy*Solutions* in the event of future non-compliance with this CONSENT ORDER, with the Act, with the Rules, or with the Permit; nor shall the State of Utah be precluded in any way from taking appropriate action should such a situation arise again at the Clive Mixed Waste Facility. However, entry into this CONSENT ORDER shall relieve Energy*Solutions* of all liability for violations which did arise or could have arisen with respect to the allegations contained in NOV No. 2007067.

EFFECTIVE DATE

12. This CONSENT ORDER shall become effective upon the date of execution by the Director.

PUBLIC PARTICIPATION

13. This CONSENT ORDER shall be subject to public notice and comment for a period of at least 30 days ("Comment Period") in accordance with Utah Admin. Code R315-124-34. The Director reserves the right to withdraw or withhold its consent if any comment received during the Comment Period disclose facts or consideration indicating the CONSENT ORDER is inappropriate, improper, or inadequate.

SIGNATORY

14. The undersigned representative of the Energy*Solutions* certifies he is authorized to enter into this CONSENT ORDER and to execute and legally bind Energy*Solutions*.

Pursuant to the Utah Solid and Hazardous Waste Act (the Act), Utah Code § 19-6-101, *et seq*., *in the Matter of* Energy*Solutions* Notice of Violation No. 2007067, the parties hereto mutually agree and consent to CONSENT ORDER No. 2105037 as evidenced below:

ENERGY*SOLUTIONS*, LLC	THE STATE OF UTAH DIVISION OF WASTE MANAGEMENT AND RADIATION CONTROL
_____	_____
Vern C. Rogers Director of Regulatory Affairs	Douglas J. Hansen Director
Date:_____	Date:_____

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2007067 Violation Number 1

Violation description Bonding Agent

1. Gravity Based Penalty

(a) Potential for Harm - **Minor:** The macroencapsulation treatment process creates a protective layer around the waste to protect if from contact with precipitation and leaching. The lack of bonding agent alone does not significantly diminish the system's overall ability to treat the waste.

(b) Extent of Deviation – **Major: –** For a period of time there were 43 instances where no bonding agent was applied to the MACRO Vaults as required.

$1,170.00 (mid-range)

(c) Multiple – 43 individual occurrences where application of bonding agent was not applied as required.

$1,170 X 43 = $50,130

2. Adjustment Factors (if applicable)

(a) Good faith -15% reduction in penalty for self-reporting violation.

$50,130 X (0.85) = $42,611

(b) Willfulness/Negligence-

(c) History of Compliance or Noncompliance-

(d) Ability to pay-

(e) Other Unique Factors-

3. Economic Benefit- Facility documents indicate that the labor and material cost savings for not applying the polymer was $2,824.

$2,824 + $42,611 = $45,435.00

4. Recalculation of Penalty based on New Information-

Total Penalty**: $45,435.00**

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2007067 Violation Number 2

Violation description Batch Tickets

1. Gravity Based Penalty

(a) Potential for Harm - **Moderate:** Macro Mix is specifically formulated to provide lasting protection against leaching and degradation. Failing to follow the recipe as designed could create a situation where the waste is subject to the elements and leaching could occur.

(b) Extent of Deviation – **Moderate:** Generally, the facility personnel follow Macro Mix recipe as designed. In these instances, the mix recipe was not followed,

$3,380 (mid-range)

(c) Multiple – 2 individual occurrences where application of batch tickets indicated that the formula was not followed, or adherence could not be confirmed.

$3,380 X 2 = $6,760

2. Adjustment Factors (if applicable)

(b) Good faith -15% reduction in penalty for self-reporting violation.

$6,760 X (085) = $5,746

(b) Willfulness/Negligence-

(c) History of Compliance or Noncompliance-

(d) Ability to pay-

(e) Other Unique Factors-

3. Economic Benefit-

4. Recalculation of Penalty based on New Information-

Total Penalty**: $5,746.00**