



DESERET POWER
ELECTRIC COOPERATIVE

**BONANZA POWER PLANT
ANNUAL PROFESSIONAL ENGINEER
CCR UNIT INSPECTION**

January 2024

**Deseret Generation and Transmission Co-operative
10714 S. Jordan Gateway St. 300
South Jordan, UT 84095**

Qualified Professional Engineer Certificate

I, Tyler S. Esplin, a registered Professional Engineer (PE) in the State of Utah, certify under penalty of law that this CCR PE Inspection Report meets the requirements of Subpart D, Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments pursuant to 40 CFR 257.84. It is my opinion that the information within this report is true and accurate according to the guidelines outlined in the said rule.

Dated this 8th day of January 2024



Registered Professional Engineer
Number 323799-2202
State of Utah

Emission Source Information

Deseret Generation and Transmission Co-operative
 Bonanza Power Plant
 12500 East 25500 South
 Vernal, Utah 84078
 Phone: 435-789-9000

Responsible Official: Eric C. Olsen, PE (Plant Manager, VP Operations)
 Company Contact: Tyler S. Esplin, PE (Environmental Superintendent)

I. General

In accordance with 40 CFR 257.84(b), this report fulfills the *Annual Inspection by a Qualified Professional Engineer (PE)* for the Bonanza Power Plant's (Bonanza) existing coal combustion residual (CCR) units. Bonanza is operated by Deseret Generation and Transmission Cooperative (Deseret) and is located approximately 35 miles southeast of Vernal, Utah. Bonanza is a 500 MW gross coal fired steam turbine and generator with two CCR units classified as existing landfills under said rule. These landfills contain fly ash, bottom ash, boiler slag, and flue gas desulfurization materials.

One of the existing landfills is located to the north end of the Bonanza site and mainly contains fly ash and flue gas desulfurization (FGD) material. This CCR unit will be referred to as the Fly Ash and FGD Sludge Landfill. The other existing landfill is located to the south end of the Bonanza site and mainly contains bottom ash and boiler slag. This CCR unit will be referred to as the Bottom Ash Landfill. Refer to Appendix A, Site Maps.

II. 40 CFR 257.84(b)(1), Annual Inspection by a Qualified Professional Engineer (PE)

An onsite inspection of both existing CCR landfills was conducted on November 9, 2023. In review of the CCR regulation that requires this PE inspection, the following must be conducted during the annual inspection.

- A. 40 CFR 257.84(b)(1)(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)”*

Fly Ash and FGD Sludge Landfill:

The following items were required to be in the operating record at this time for the Fly Ash and FGD Sludge Landfill and all were reviewed:

1. *Fugitive Dust Control Plan*
2. *CCR Unit Run On / Run Off Control Plan*

3. *2016-2022 Annual Professional Engineer CCR Units Inspection*
4. *2016-2023 Fugitive Dust Control Report*

In addition, the following weekly plant documents were reviewed:

1. *Inspections by a Qualified Person*

The *Fugitive Dust Control Plan* appears to be in compliance with the said regulation for the Fly Ash and FGD Sludge Landfill. There were zero (0) fugitive dust issues and/or concerns noted the day of the inspection and record review. Records are maintained on site to demonstrate control measures that mitigate fugitive emissions. **Bonanza is in compliance with the *Fugitive Dust Control Plan* requirement.**

The *Inspections by a Qualified Person* appear to be in partial compliance with the said regulation. These inspections are required to be completed at intervals not to exceed seven (7) days. There were six occurrences where intervals exceeded seven days. These inspections were reviewed from the last PE inspection starting on November 8, 2022 up through the day of the current inspection (November 9, 2023). The following items are contained on a CCR inspection checklist and were reviewed during each inspection by a qualified person:

1. Are there 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?
2. Are there any noticeable issues with the erosion controls?
3. Are there any noticeable issues with slope stability?
4. Are there any issues with the water quality monitoring systems (CCR monitoring wells)?
5. Are there any issues with the CCR landfill's fugitive emissions (dust)?
6. Is the surface water percolation minimized (i.e. ponding reduced as much as possible)?
7. Is the CCR waste placed properly in the CCR landfill?

Bonanza is in compliance with the *Inspections by a Qualified Person* requirement.

Bottom Ash Landfill:

The following items required to be in the operating record at this time for the Bottom Ash Landfill and all were reviewed:

1. *Fugitive Dust Control Plan*
2. *CCR Unit Run On / Run Off Control Plan*
3. *2016-2022 Annual Professional Engineer CCR Units Inspection*
4. *2016-2023 Fugitive Dust Control Report*

In addition, the following weekly plant documents were reviewed:

1. Inspections by a Qualified Person

The *Fugitive Dust Control Plan* appears to be in compliance with the said regulation for the Bottom Ash Landfill. There were zero (0) fugitive dust issues and/or concerns noted the day of the inspection and record review. Records are maintained on site to demonstrate control measures that mitigate fugitive emissions. **Bonanza is in compliance with the *Fugitive Dust Control Plan* requirement.**

The *Inspections by a Qualified Person* appear to be in partial compliance with the said regulation. These inspections are required to be completed at intervals not to exceed seven (7) days. There were six occurrences where intervals exceeded seven days. These inspections were reviewed from the last PE inspection starting on November 8, 2022 up through the day of the current inspection (November 9, 2023). The following items are contained on a CCR inspection checklist and were reviewed during each inspection by a qualified person:

1. Are there 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?
2. Are there any noticeable issues with the erosion controls?
3. Are there any noticeable issues with slope stability?
4. Are there any issues with the water quality monitoring systems (CCR monitoring wells)?
5. Are there any issues with the CCR landfill's fugitive emissions (dust)?
6. Is the surface water percolation minimized (i.e. ponding reduced as much as possible)?
7. Is the CCR waste placed properly in the CCR landfill?

Bonanza is in compliance with the *Inspections by a Qualified Person* requirement.

B. 40 CFR 257.84(b)(1)(ii): “A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.”

Fly Ash and FGD Sludge Landfill:

The Fly Ash and FGD Sludge Landfill was visually inspected on November 9, 2023 for signs of distress and/or malfunctions. No signs were identified. This landfill appears to be generally in good shape as far as stability.

Bottom Ash Landfill:

The Bottom Ash Landfill was visually inspected on November 9, 2023 for signs of distress and/or malfunctions. No signs were identified. This landfill appears to be generally in good shape as far as stability.

III. 40 CFR 257.84(b)(2), Inspection Report

In review of the CCR regulation that requires this PE inspection report, the following must be included in this report.

A. 40 CFR 257.84(b)(2)(i): “Any changes in geometry of the structure since the previous annual inspection”

Fly Ash and FGD Sludge Landfill:

Other than further build out of the landfill, no geometry changes were noted during this reporting period.

Bottom Ash Landfill:

Other than further build out of the landfill, no geometry changes were noted during this reporting period.

B. 40 CFR 257.84(b)(2)(ii): “The approximate volume of CCR contained in the unit at the time of the inspection”

Fly Ash and FGD Sludge Landfill:

The Fly Ash and FGD Sludge Landfill contained approximately 7.61 million cubic yards of CCR material at the time of inspection on November 10, 2023. *The volume has been updated based upon a field survey and is lower than the 2022 estimated volume of 7.66 million cubic yards which was estimated on plant throughput.* Refer to Table 1 below for volume estimate.

Table 1, Fly Ash and FGD Sludge Landfill CCR Volume

Total Volume as of 11/10/2023	≈ 7.49 million cyds
<i>Source: Survey; CRS Engineers</i>	

Bottom Ash Landfill:

The Bottom Ash Landfill contained approximately 0.84 million cubic yards of CCR material at the time of inspection on November 10, 2023. *The volume has been updated based upon a field survey and is lower than the 2022 estimated volume of 0.87 million cubic yards which was estimated on plant throughput.* Refer to Table 2 below for volume estimate.

Table 2, Bottom Ash Landfill CCR Volume

Total Volume as of 11/10/2023 <i>Source: Survey; CRS Engineers</i>	≈ 0.84 million cyds
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- C. 40 CFR 257.84(b)(2)(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”**

Fly Ash and FGD Sludge Landfill:

The Fly Ash and FGD Sludge Landfill was visually inspected on November 9, 2023 for signs of structural weakness. No signs were identified. This landfill appears to be generally in good shape as far as stability. Also, there does not appear to be any conditions that are disrupting or have the potential to disrupt the operation and safety of this CCR unit.

Bottom Ash Landfill:

The Bottom Ash Landfill was visually inspected on November 9, 2023 for signs of structural weakness. No signs were identified. This landfill appears to be generally in good shape as far as stability. Also, there does not appear to be any conditions that are disrupting or have the potential to disrupt the operation and safety of this CCR unit.

- D. 40 CFR 257.84(b)(2)(iv) “Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection”**

Fly Ash and FGD Sludge Landfill:

No changes were found that may affect the stability or operation of the CCR unit since the previous annual inspection.

Bottom Ash Landfill:

No changes were found that may affect the stability or operation of the CCR unit since the previous annual inspection.

Appendix A Site Maps

FLY ASH AND FGD SLUDGE LANDFILL
TOTAL ±148 ACRES



EXISTING LANDFILL (FULL)
FLY ASH AND FGD SLUDGE LANDFILL
±72 ACRES

EXISTING LANDFILL (NOT FULL*)
FLY ASH AND FGD SLUDGE LANDFILL
±76 ACRES

BOTTOM ASH LANDFILL
TOTAL ±52 ACRES

EXISTING LANDFILL (FULL)
BOTTOM ASH LANDFILL
±23 ACRES

EXISTING LANDFILL (NOT FULL*)
BOTTOM ASH LANDFILL
±29 ACRES

BONANZA POWER PLANT SITE

* A LANDFILL BASE/FOOTPRINT EXISTS. THIS LANDFILL FOOTPRINT EXISTED PRIOR TO THE CCR COMPLIANCE DATE. THE INCLUSIVE FOOTPRINT, FULL AND NOT FULL LANDFILL PORTION, IS CONSIDERED ONE EXISTING LANDFILL.

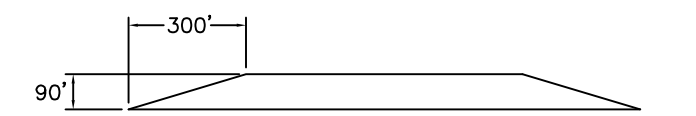
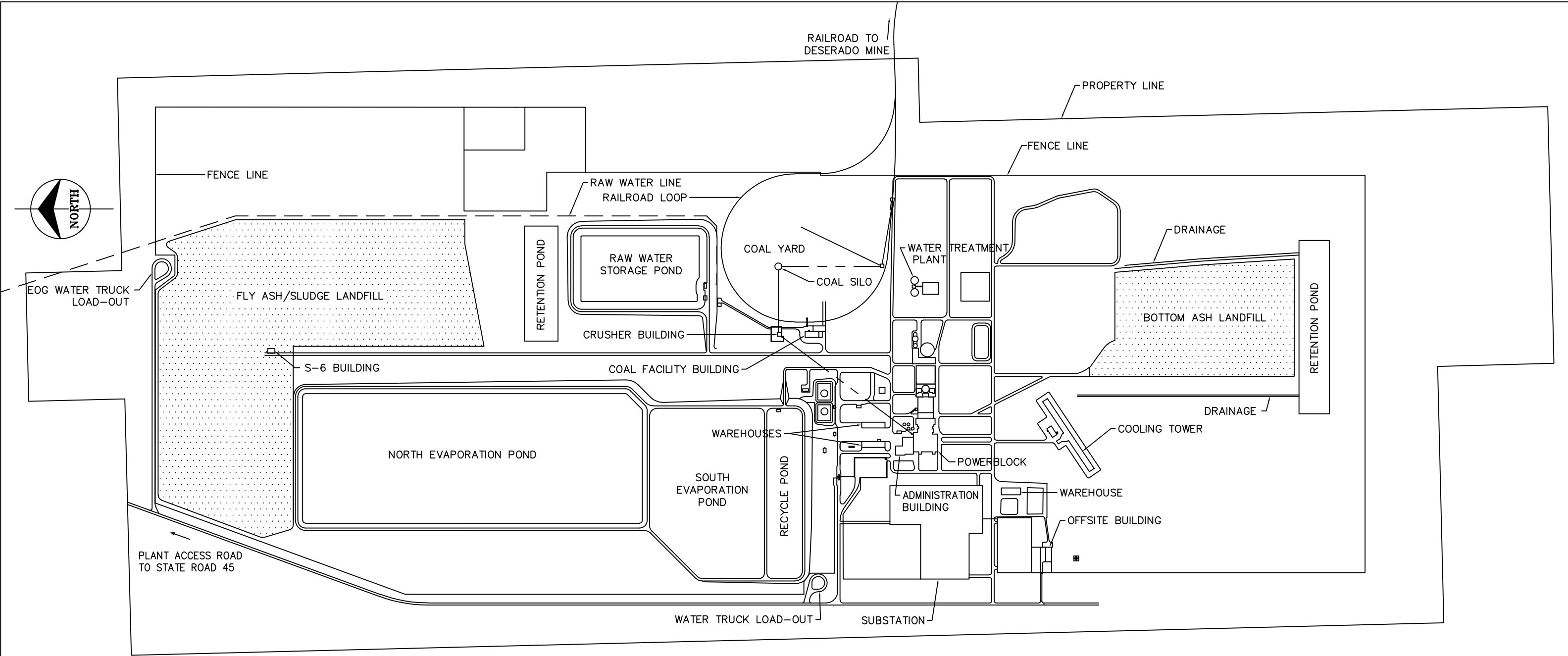


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**BONANZA POWER PLANT
 SITE MAP**

CAD FILE : ... Inspection (11-24-15).dwg

No.	REVISIONS	DATE	BY	ENGINEERING	BY	DATE	DRAFT	BY	DATE	W.O.
1	Revised to depict actual pre-2015 dimensions	12/18	TSE	ENG	ECO	1/16	DRAWN	ECO	1/16	DWG.
				APVD			CHK			
				PLOT SCALE: 1"=2000'			APVD			A-1



TYPICAL FLY ASH/SLUDGE LANDFILL CROSS SECTION



TYPICAL BOTTOM ASH LANDFILL CROSS SECTION

FLY ASH/SLUDGE LANDFILL ACREAGE	
COMPLETED LANDFILL FOOTPRINT AREA (A)	142.63 ACRES
COMPLETED LANDFILL SURFACE AREA (B)	146.06 ACRES
20' PERIMETER AROUND FOOTPRINT (C)	5.79 ACRES
TOTAL FOOTPRINT AREA (A+C)	148.41 ACRES
TOTAL SURFACE AREA (B+C)	151.85 ACRES

BOTTOM ASH LANDFILL ACREAGE	
COMPLETED LANDFILL FOOTPRINT AREA (D)	49.66 ACRES
COMPLETED LANDFILL SURFACE AREA (E)	50.00 ACRES
20' PERIMETER AROUND FOOTPRINT (F)	2.83 ACRES
TOTAL FOOTPRINT AREA (D+F)	52.49 ACRES
TOTAL SURFACE AREA (E+F)	52.83 ACRES



BONANZA POWER PLANT
VERNAL, UTAH



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TITLE:
MAP – BONANZA POWER PLANT
CCR UNITS

CAD FILE NAME: 20151117.DWG

3	REVISED TO SHOW ACTUAL LANDFILL / CLARIFY ACREAGE	11/25	TSE	TSE	ENG	OLSEN	11/15	DRAFT	LJ	9/10	W.O. No.	20151117	SHEET 1 OF 1 REV. 3
2	REVISED TO SHOW ACTUAL LANDFILL FOOTPRINT PRIOR TO OCTOBER 2015.	11/15	KBS	EO/TE	ENG	ESPLIN	11/15	DRAWN	KBS	9/10	DWG. No.		
1	CREATED FROM 20100901	11/15	KBS	EO/TE	APVD			CHK	EO/TE	11/15			
No.	REVISIONS	DATE	BY	APVD	PLOT SCALE: 1" = 1000'			APVD					