CCR COMPLIANCE

FUGITIVE DUST CONTROL PLAN

Prepared for:

Tucson Electric Power Company
Springerville Generating Station
Springerville, Arizona

Prepared by:

CB&I Environmental & Infrastructure, Inc.
Pittsburgh, Pennsylvania 15235

September 2015

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Plan Review/Assessment Log

Date of Review	Reviewer Name	Amendment Required (YES/NO)	Sections Amended and Reason
October 2015	Charles Komadina, TEP Devin Moose, CB&I	NA	Original Plan

1.0 Introduction

On December 19, 2014, the administrator of the United States Environmental Protection Agency signed the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities final rule (the Rule). The Rule was published in the Federal Register on April 17, 2015 and becomes effective on October 19, 2015. The Rule establishes a comprehensive set of requirements for the disposal of CCR in landfills and surface impoundments at coal-fired power plants under Subtitle D of the Resource Conservation and Recovery Act. These requirements include compliance with location restrictions, design criteria, operating criteria, groundwater monitoring and corrective action, and closure and post-closure care aspects. The operating criteria include air criteria specified in Title 40 of the Code of Federal Regulations (CFR), §257.80 to address the potential pollution caused by windblown dust from CCR units. According to the Rule, owners or operators of CCR units must adopt measures that will effectively minimize CCR from becoming airborne at the facility by developing and operating in accordance with a fugitive dust control plan (Plan) with adequate dust control measures.

The Springerville Generating Station (SGS), operated by Tucson Electric Power Company (TEP), is a coal-fired power plant located in Apache County, approximately 15 miles north of Springerville, Arizona. The Rule applies to this facility due to the disposal of CCR that is generated from the combustion of coal at the site. The facility's ash disposal site is the only CCR unit associated with the station's operations. The SGS ash disposal site meets the definition of "landfill". The SGS does not have any CCR impoundments.

This Plan has been prepared to comply with the requirements as specified in §257.80(b)(1-7) of the Rule, including certification by a professional engineer as documented in Section 7.0 of this Plan. Additionally, this Plan will be placed in the SGS's facility operating record per §257.105(g)(1), noticed to the State Director per §257.106(g)(1), and posted to the publicly accessible internet site per §257.107(g)(1).

2.0 Facility Description

2.1 Process Overview

SGS is an electric generating facility located in Apache County, approximately 15 miles north of Springerville, Arizona. SGS occupies a total area of 14,355 acres, which includes the power plant area, ash disposal area and water well fields. The facility operates four pulverized coal-fired units (Units 1-4). Units 1 and 2 are capable of firing coal and fuel oil and are rated to produce a combined output of approximately 780 net megawatts. These units are equipped with baghouses to control particulate matter (PM) emissions, spray dry absorbers to control sulfur dioxide (SO2) emissions and low nitrogen oxide (NOx) burners and overfire air ports to control NOx emissions. Units 3 and 4 are capable of firing coal and #2 distillate oil and each are rated to produce an output of approximately 420 net megawatts. Units 3 and 4 are equipped with baghouses to control PM emissions, spray dry absorbers to control SO2 emissions and low NOx burners and selective catalytic reduction (SCR) units to control NOx emissions. In addition to the coal-fired units, SGS includes various ancillary facilities such as an oil-fired auxiliary boiler, a coal preparation plant, coal storage piles, lime storage and handling facilities and cooling towers.

2.2 CCR Fugitive Dust Sources

The Rule applies to fugitive dust originating from CCR units, ash haul roads, and other CCR management and material handling activities. CCR generated at SGS includes fly ash and bottom ash. The following sub-sections provide a description of fugitive dust sources from handling each type of CCR. Figure 1 shows the facility's layout and location of potential fugitive dust sources.

2.2.1 Ash Disposal Site

SGS's on-site ash disposal landfill is approximately 400 acres and was designed for on-site disposal of fly ash and bottom ash generated from the operation of the coal-fired boilers at the station. The ash disposal site has been identified as an existing CCR landfill according to the Rule. CCR materials including fly ash and bottom ash are transported by trucks from the power plant area to the ash disposal site where they are dumped and then spread and compacted with a bulldozer. The landfill is constructed in a bench and crest design using compacted layers of fly ash and bottom ash. Following the completion of each bench, the ash material is covered with approximately two feet of native top soil and allowed to naturally re-vegetate.

2.2.2 Fly Ash Handling

Fly ash is generated from coal combustion in the boiler and is captured by a baghouse before the flue gases reach the stack. The fly ash collected in the baghouse hopper is pneumatically

conveyed to fly ash silos equipped with dust filters for storage. The fly ash silos are unloaded via a screw conveyor where the ash is conditioned with water to approximately 20 percent moisture as it's loaded into trucks for transport to the ash disposal site.

SGS is also permitted to receive fly ash from TEP's Irvington Generating Station (IGS). Fly ash is transported from IGS in an enclosed truck and is pneumatically conveyed from the truck to SGS Unit 2's fly ash silo without exposure to the atmosphere. The fly ash is then processed with SGS's fly ash as described above.

2.2.3 Bottom Ash Handling

Compared to fly ash, bottom ash is a heavier, coarser material that falls to the bottom of the boiler and has a typical moisture content of approximately 20 percent. From the ash hopper underneath the boiler, bottom ash is either transferred by conveyor pipes to a dewatering bin for Unit 1 or through a drag chain for Units 2, 3 and 4. The bottom ash is then drained of free water and is transported wet via truck to the ash disposal site.

Although bottom ash is a CCR, bottom ash handling operations at SGS are not considered a viable contributing source of CCR fugitive dust emissions due to the high moisture content and enclosed conveyance system.

2.2.4 Transport Roadways

As described above, trucks transport conditioned fly ash and bottom ash to the on-site ash disposal site. The trucks travel over oil and chip sealed roads from the power plant to the landfill. These roads are regularly maintained with oil and chip surfacing. The haul roads are shown on Figure 1 of this Plan.

3.0 Fugitive Dust Control Regulatory Requirements

3.1 CCR Rule Air Criteria

Under the Rule, the owner or operator of a CCR unit must adopt measures that will effectively minimize CCR from becoming airborne at the facility, including fugitive dust originating from CCR units, roads, and other CCR management and material handling activities.

In order to document these measures, the owner or operator of the CCR unit must prepare and operate in accordance with a CCR fugitive dust control plan. According to §257.80(b), the Plan must include the following elements:

- Identification and description of the CCR fugitive dust control measures that will be used to minimize CCR from becoming airborne at the facility, along with an explanation of how the measures selected are applicable and appropriate for site conditions.
- Description of procedures used to emplace CCR as conditioned CCR at CCR landfills. (Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal but will not result in the free liquids.)
- Description of procedures used to log citizen complaints received by the facility involving CCR fugitive dust events.
- Description of procedures to periodically assess the effectiveness of the Plan.

The Plan should be updated anytime there is a change in conditions that would substantially affect the written Plan.

In addition to the fugitive dust control plan, §257.80(c) requires the owner or operator of a CCR unit to file an annual fugitive dust control report.

3.2 Title V Operating Permit

Prior to the promulgation of the Rule, SGS has been required by their Title V Operating Permit to minimize and monitor fugitive dust from the site. The facility is operated according to the SGS Title V Operating Permit issued by the Arizona Department of Environmental Quality. The permit includes requirements for fugitive dust control. The following CCR fugitive dust emission sources are identified in the permit:

- Fly Ash Handling – Unit 1 and Unit 2
- Fly Ash Handling – Unit 3 and Unit 4

- Non-point sources of fugitive dust including open areas, roadways and streets, storage piles and material handling.

For these units, the permit contains emission source specific conditions related to the prevention and control of airborne fugitive dust. Permit requirements related to CCR fugitive dust include:

- Opacity and particulate matter emission limitations.

- Air pollution control requirements such as enclosure requirements, watering requirements, oil and chip surfacing requirements, and other precautions to prevent excessive amounts of particulate matter from becoming airborne from fugitive dust sources.

- Opacity monitoring requirements.

The specific methods used to comply with these requirements for sources of CCR fugitive dust are further discussed in Section 4.

4.0 Fugitive Dust Control Practices and Procedures

Potential CCR fugitive dust sources have been identified and described in Section 2.0 of this Plan. This section will detail control measures employed at the facility to minimize airborne dust from these sources in accordance with §257.80(b)(1-2) of the Rule.

4.1 CCR Handling

Fly ash mixed with product from the spray dry absorbers is collected from the baghouse hoppers and is pneumatically conveyed to a silo controlled with a bin vent filter for storage. The system is fully enclosed and not exposed to the atmosphere. From the silo, the fly ash is loaded into a truck via screw conveyor where the fly ash is conditioned with water to approximately 20 percent moisture. The high moisture content minimizes airborne dust during loading to the trucks. The facility also practices good housekeeping in the fly ash handling area by cleaning any excess fly ash as soon as practicable and regularly watering the area. Good housekeeping is practiced in areas that bottom ash and spray dry absorber materials are collected by cleaning up any excess material resulting from maintenance, spillage, and track out.

4.1.1 Monitoring

A certified Method 9 observer conducts a weekly visual survey of visible emissions from the fly ash handling area when in operation. If the observed opacity exceeds the standards set forth in the facility's Title V operating permit, actions will be taken to reduce opacity below the standard and excess emissions will be reported.

4.1.1 Recordkeeping

Records of the opacity observations are maintained and include the name of the observer, the date on which the observation was made and the results of the observation. The records are maintained at the station's Environmental Department and retained for at least five years.

4.2 Transport Roadways

Ash haul roads are regularly maintained with oil and chip surfacing. Plant roadways including ash haul roads to the ash disposal site are watered by water trucks on each day on which trucks and/or other vehicular traffic occurs unless roads are naturally wet. The amount of time dedicated to watering the roads is a function of the dryness of the surface and is determined through daily observations by station personnel. The amount of water applied varies seasonally. Dust bearing material spilled in significant amounts onto any roadway is cleaned as soon as practicable. Fugitive dust emissions are further controlled by posting and maintaining a maximum vehicle speed limit of 15 miles per hour within the power plant area and 35 miles per hour on the ash haul roads.

4.2.1 Monitoring

A certified Method 9 observer conducts a bi-weekly visual survey of visible emissions from the plant's roadways. If the observed opacity exceeds the standards set forth in the facility's Title V operating permit, actions will be taken to reduce opacity below the standard and excess emissions will be reported.

4.2.2 Recordkeeping

Records of the opacity observations are maintained and include the name of the observer, the date on which the observation was made and the results of the observation. Roadway maintenance records regarding watering/dust control are documented in daily logs completed by station personnel. A blank copy of these logs is included in Appendix A. The completed logs are forwarded to the station's Environmental Department and retained for at least five years.

4.3 Ash Disposal Site

Fly ash mixed with product from the spray dry absorber and bottom ash is disposed at the facility's ash disposal site. Fugitive dust is minimized at the ash disposal site by spreading and compacting the materials with a bulldozer as soon as practical after being delivered (i.e., the freshly dumped materials are not left on the landfill surface for extended periods of time). Additionally, a water truck regularly circulates to spread water on the internal roadways and the open operating areas of the disposal site.

Only active areas of the ash disposal site are disturbed with vehicle traffic to further minimize airborne dust. To help prevent fugitive dust from erosion, following the completion of each bench of the landfill, the ash material is covered with approximately two feet of native top soil and allowed to naturally re-vegetate.

4.3.1 Monitoring

A certified Method 9 observer conducts a weekly visual survey of visible emissions from the ash handling areas, and a bi-weekly visual survey of visible emissions from non-point sources. If the observed opacity exceeds the standards set forth in the facility's Title V operating permit, actions will be taken to reduce opacity below the standard and excess emissions will be reported.

4.3.2 Recordkeeping

Records of the opacity observations are maintained and include the name of the observer, the date on which the observation was made and the results of the observation. Watering/dust control activities are documented in daily logs completed by station personnel. A blank copy of these logs is included in Appendix A. The completed logs are forwarded to the station's Environmental Department and retained for at least five years.

4.4 Dust Control Measures During High Wind Conditions

In addition to the dust control methods described above utilized during normal operations, SGS also takes additional measures to reduce fugitive dust during high wind conditions. Total suspended particulate data and weather data, including wind speed and direction, is monitored with an on-site weather station and is displayed in the Unit 1 and 2 control room and in the Unit 3 and 4 control room. An alarm alerts the operator of high winds and visible haze in the Unit 1 and 2 control room. When an alert level is triggered (wind speed and/or haze), the shift supervisor is notified by the control room operator. Upon being notified, the shift supervisor is required to visually inspect the SGS site to assess and, if needed, initiate dust control measures. The shift supervisor will also notify others that high wind dust control practices need to be initiated and will be proactive in initiating dust control practices prior to high wind events.

4.5 Annual Reporting

In accordance with §257.80(c), the station must prepare an annual fugitive dust control report that includes the following information:

- A description of actions taken to control CCR fugitive dust
- A record of all citizen complaints
- A summary of any corrective actions taken

The first annual report must be completed no later than 14 months after placing the initial CCR fugitive dust control plan in SGS's facility operating record. Subsequent annual reports will be completed one year after the date of the initial annual report. Additionally, as required, the annual reports will be placed in the facility's operating record per §257.105(g)(2), noticed to the State Director per §257.106(g)(2), and posted to the publicly accessible internet site per §257.107(g)(2).

5.0 Procedures for Citizen Complaints

In accordance with §257.80(b)(3) of the Rule, this section outlines the procedure that TEP will follow to log citizen complaints involving fugitive dust events from CCR units. All citizen complaints received should be routed through the SGS Environmental Resource staff or a Shift Supervisor. The SGS Environmental staff or shift supervisor will log in the complaint using the "Citizen Complaint Form" included in Appendix B. "Citizen Complaint Form(s)" completed by the Shift Supervisor shall be submitted to an SGS Environmental Staff member. SGS Environmental staff will, if appropriate, as soon as practicable conduct a thorough investigation relative to the complaint. The results of the investigation will be recorded and communicated to the appropriate parties. If the investigation confirms a fugitive dust emission event, SGS Environmental staff will undertake a root cause analysis to address the source of the excess fugitive dust and will develop a plan to mitigate future occurrences and remediate impacts, as necessary. Citizen complaints and the associated investigations will be documented using the "Citizen Complaint Form" included in Appendix B and will be attached to the annual CCR fugitive dust report.

6.0 Procedures for Plan Assessments and Amendments

Fugitive dust control practices for each source of CCR fugitive dust are described in Section 4.0 of this Plan. Based on current monitoring requirements and observations, these control measures have been determined to be effective. This Plan will be periodically reviewed by the station's environmental coordinator to ensure full compliance with all fugitive dust control, monitoring, and recordkeeping procedures as outlined herein. During this review, the Plan's effectiveness will be assessed as required per §257.80(b)(4) of the Rule. This review will serve to either confirm the continued effectiveness of the Plan or will identify sections which require revision/upgrade to reflect any relevant changes in station operations, CCR unit aspects, or necessary improvements in fugitive dust control protocols.

Accordingly, when new processes or modifications of existing processes are planned, the station's environmental coordinator will evaluate the project for potential changes to this Plan. In accordance with §257.80(b)(6) of the Rule, the Plan will be amended to add any new CCR units or to update any modifications in the operation of existing fugitive dust sources. The amended Plan will be reviewed and recertified by a registered professional engineer and will be placed in SGS's facility operating record as required per §257.105(g)(1). The amended Plan will supersede and replace any prior versions. Availability of the amended Plan will be noticed to the State Director per §257.106(g)(1) and posted to the publicly accessible internet site per §257.107(g)(1).

A record of Plan reviews/assessments is provided on the first page of this document, immediately following the Table of Contents.

7.0 Professional Engineer Certification

The undersigned registered professional engineer is familiar with the requirements of §257.80 and has visited and examined the Springerville Generating Station or has supervised examination of the Springerville Generating Station by appropriately qualified personnel. The undersigned registered professional engineer attests that this CCR Fugitive Dust Control Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and meets the requirements of §257.80, and that this Plan is adequate for the SGS station. This certification was prepared as required by §257.80(b)(7).

Name of Professional Engineer: Devin Moose

Company: CB&I Environmental & Infrastructure, Inc.

Signature:

Date: 10/5/15

PE Registration State: Arizona

PE Registration Number: 41444

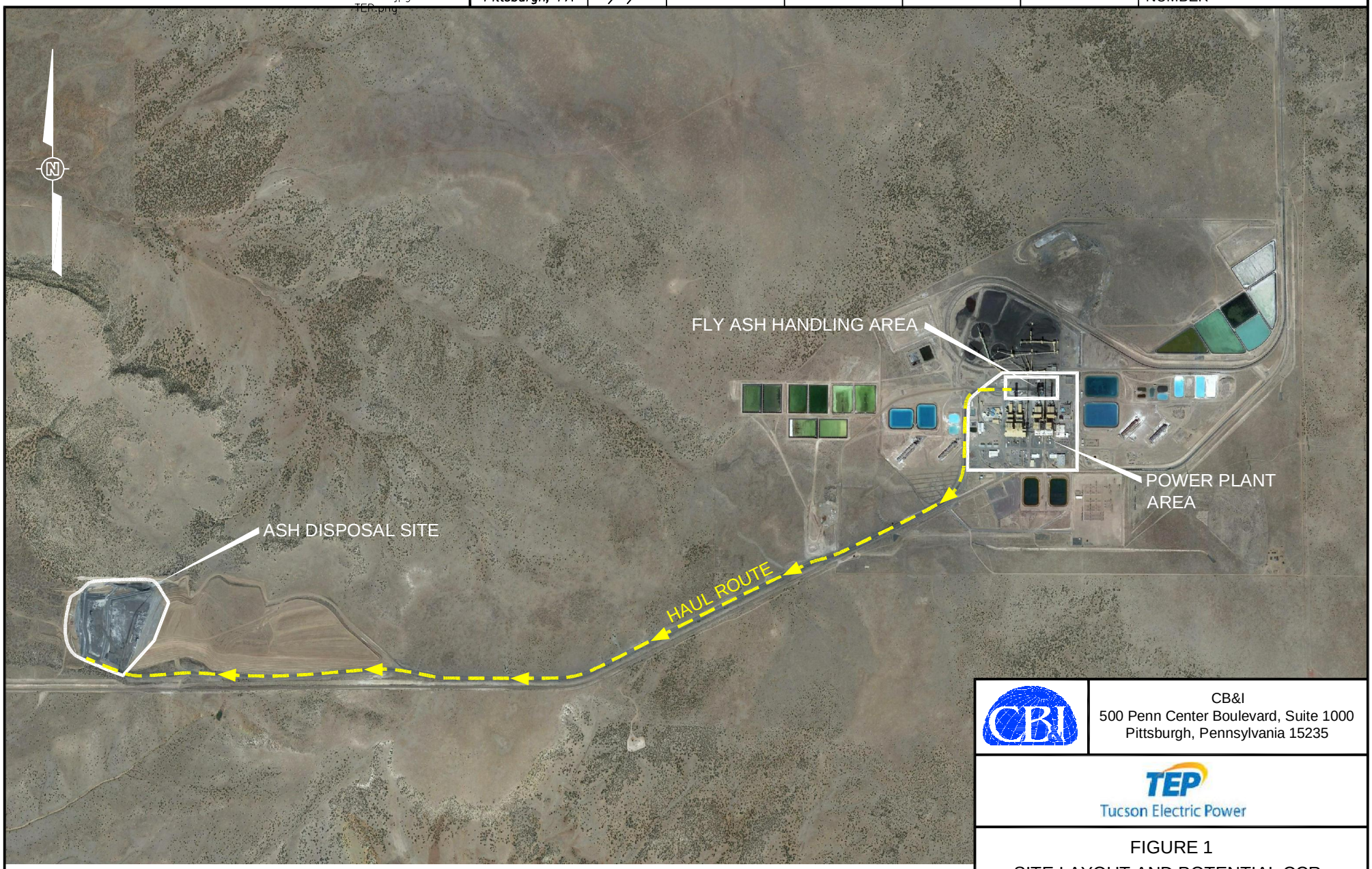
Professional Engineer Seal:

Figure

File: O:\PROJECT\154855\154855-A1.dwg
Plot Date/Time: Sep 09, 2015 - 3:30pm
Plotted By: greg.jones

Xref :
Image : CB&I.jpg
PHOTO.jpg
TEP.png

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	-/-/--	--	--	--	--	154855-A1



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TEP
Tucson Electric Power

FIGURE 1
SITE LAYOUT AND POTENTIAL CCR FUGITIVE DUST SOURCES
SPRINGERVILLE GENERATING STATION
SPRINGERVILLE, ARIZONA

Appendix A

Recordkeeping Logs

Springerville Generating Station
Water Truck Report

Month/Year	
Truck #	

	Date	Time	Driver	Location	Comments	Date	Time	Driver	Location	Comments
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Total Loads

Note: Start new log sheet first day of each month.

Week Of: ____/____/_____

Visible Emissions Survey

Process	Source	Opacity Limit	Observed Opacity	Exceedance Limit	> Limit (Y/N)	Comments/Conditions
U1/U2 Ash Handling:	U1 Ash Unloading	20%		X 6 min.		
Date:	U1 Ash Storage Silo Vent	20%		X 6 min.		
Any observed emissions from	U2 Ash Unloading	20%		X 6 min.		
process requiring Method 9?	U2 Ash Storage Silo Vent	20%		X 6 min.		
Y/N:_____						
U3/U4 Ash Handling:	U3 Ash Unloading	20%		X 6 min.		
Date:	U3 Ash Storage Silo BH	10%		X 6 min.		
Any observed emissions from	U4 Ash Unloading	20%		X 6 min.		
process requiring Method 9?	U4 Ash Storage Silo BH	10%		X 6 min.		
Y/N:_____						
Non-Point Sources:	Open Areas (including CCR Landfill)	40%		X 6 min.		
Date:	Roadways and Streets	40%		X 6 min.		
process requiring Method 9?						
Y/N:_____						

Method 9 Observer:_____

Appendix B

Citizen Complaint Form – CCR Fugitive Dust

Springerville Generating Station
Citizen Complaint Form - Coal Combustion Residuals Fugitive Dust

Citizen Information

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number: _____ E-Mail:_____

Citizen did not provide personal information ☐

Complaint Information

Please describe complaint (What did they observe?):

_____

_____

_____

_____

_____

_____

_____

Complaint Observation Date

Date of occurrence (tracking number): _____

Time of occurrence: _____

Citizen Location

Describe citizen's location at time of occurrence? _____

Use map in Attachment X, if possible, to identify the location of citizen when he/she observed the occurrence. Use the attached map to identify the location of the observed occurrence.

Form filled out by (print name): _____ Date: _____ Time: _____