

**2018 ANNUAL INSPECTION REPORT OF CCR SURFACE IMPOUNDMENT BY QUALIFIED PROFESSIONAL ENGINEER**  
**40 CFR 257.83**

**FACILITY INFORMATION**

Facility Name / Address	La Cygne Generating Station / 25166 East 2200 Road La Cygne, Kansas 66040
Owner Name	Kansas City Power & Light Company
CCR Unit	Upper AQC Impoundment
Inspection Date	November 20, 2018

**ANNUAL CCR UNIT INSPECTION REPORT**

Rule	Inspection Results																								
<p>§257.83(b)(2)(i):</p> <p><i>“(2) Inspection report. The qualified professional engineer must prepare a report following each inspection that addresses the following:</i></p> <p><i>(i) Any changes in geometry of the impounding structure since the previous annual inspection;”</i></p>	<p>A visual inspection of the Upper AQC Impoundment and associated hydraulic structures was completed on November 20, 2018 by Mr. Patrick Goeke, a qualified professional engineer (QPE) and/or his designated representative. No changes in the geometry of the impounding structure were noted since the 2017 site inspection.</p>																								
<p>§257.83(b)(2)(ii):</p> <p><i>“(ii) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;”</i></p>	<p>Existing instrumentation at the Upper AQC Impoundment consists of nine piezometers present on the crest of the embankment, spaced around the impoundment. The staff gauge was removed during 2017. The water levels in the piezometers are measured no less than every 30 days. A review of the 7- and 30-day inspection reports completed since the prior year’s inspection was completed. The maximum recorded readings of each instrument since the last inspection date are listed in Table 1. No issues of concern were noted.</p>																								
<p>§257.83(b)(2)(iii):</p> <p><i>“(iii) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;”</i></p>	<p>The maximum and minimum depths of impounded water frequently change depending on plant needs and rainfall events. At the time of inspection, the approximate maximum, minimum and present elevations of the water and CCR in the impoundment were as follows.</p> <table border="1"> <thead> <tr> <th>Water</th> <th>Depth (ft)</th> <th>Elevation (MSL)</th> </tr> </thead> <tbody> <tr> <td>Minimum</td> <td>0</td> <td>865</td> </tr> <tr> <td>Maximum</td> <td>6-10</td> <td>871-875</td> </tr> <tr> <td>Present</td> <td>6</td> <td>871</td> </tr> <tr> <th>CCR</th> <th>Depth (ft)</th> <th>Elevation (MSL)</th> </tr> <tr> <td>Minimum</td> <td>0</td> <td>850</td> </tr> <tr> <td>Maximum</td> <td>40</td> <td>895+</td> </tr> <tr> <td>Present</td> <td>40</td> <td>895+</td> </tr> </tbody> </table>	Water	Depth (ft)	Elevation (MSL)	Minimum	0	865	Maximum	6-10	871-875	Present	6	871	CCR	Depth (ft)	Elevation (MSL)	Minimum	0	850	Maximum	40	895+	Present	40	895+
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<p>§257.83(b)(2)(iv):</p> <p><i>“(iv) The storage capacity of the impounding structure at the time of the inspection;”</i></p>	<p>The storage capacity of the impoundment structure at the time of inspection was 13.6 million cubic yards<sup>1</sup>.</p>																								

<p>§257.83(b)(2)(v):</p> <p><i>“(v) The approximate volume of the impounded water and CCR at the time of the inspection;”</i></p>	<p>The approximate volume of the impounded water and CCR at the time of inspection was 14.4 million cubic yards<sup>1,2</sup>.</p>
<p>§257.83(b)(2)(vi):</p> <p><i>“(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;”</i></p>	<p>At the time of this inspection, there were no signs of distress or malfunction that would indicate actual or potential structural weakness of the perimeter impoundment dike. The QPE reviewed §257.84(a)(1) 7-day and 30-day reports as part of the annual inspection. There was no indication that existing conditions or regrading activities at the Upper AQC Impoundment have disrupted or have the potential to disrupt safety or operations.</p>
<p>§257.83(b)(2)(vii):</p> <p><i>“(vii) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.”</i></p>	<p>There have been no changes to the perimeter dike since the previous annual inspection. The internal drainage within the Upper AQC Impoundment has improved the operation and safety of the CCR unit by routing stormwater to the principal spillway in a more efficient manner.</p>

1. Current storage volume [(b)(2)(v)] exceeds calculated storage capacity [(b)(2)(iv)] because dry CCR is being placed in the unit above the top of the embankment as noted in (b)(2)(iii) for the purpose of surface water drainage. This placement and volume does not exceed the permitted storage capacity.
2. Volume calculations were completed by SCS using the 2017 volume determined by AECOM from the topographic survey dated November 30, 2017 by Tukup Technologies and truck counts of CCR moved into the Upper AQC Impoundment between November 30, 2017 and November 20, 2018 to improve internal drainage in the unit.

## PROFESSIONAL ENGINEER CERTIFICATION

The undersigned registered professional engineer is familiar with the requirements of the CCR Rule and has visited and examined the CCR unit or has supervised examination of the CCR unit by appropriately qualified personnel. I hereby certify based on a review of available information within the La Cygne Generating Station’s operating records and observations from my personal on-site inspection, that this CCR unit does not exhibit any appearances of actual/potential structural weakness that would be disruptive to the safety or normal operations of the unit. The unit is being operated and maintained consistent with recognized and generally accepted good engineering standards and practices. This certification was prepared as required by 40 CFR Part §257.83.

Name of Professional Engineer: Patrick M. Goeke, P.E.



Professional Engineer Seal:

Attachment: Table 1

**Table 1 – Highest Water Level Readings during 2018 Inspection Period**

(November 2017 to November 2018)

<b>Piezometer</b>	<b>Water Level Elevation (ft)</b>
P-501	856.31
P-502	853.89
P-503	855.55
P-504	858.09
P-505	861.53
P-506	870.32
P-507	881.51
P-508	881.92
P-509	881.92
Pool Gauge	Staff gauge removed