

# Annual CCR Surface Impoundment PE Inspection

Pond 003

New Madrid Power Plant

New Madrid, MO

Associated Electric Cooperative, Inc.

# Inspection

## *Visual Inspection*

On July 11, 2024, a visual inspection of the surface impoundment was completed. The visual inspection included both a visual inspection of the CCR impoundment to identify signs of distress or malfunction and a visual inspection of the hydraulic structures for structural integrity. The following subsections and enclosed inspection report describe the conditions observed during the inspection.

## *Changes in Geometry*

There have been no changes to the geometry of the impounding structure since the previous annual inspection.

## *Instrumentation Readings*

Piezometers/monitoring wells are located along the crest of the dikes of Pond 003. The piezometers/groundwater monitoring wells were installed for purposes of monitoring groundwater and are not monitored for structural stability purposes. No readings were taken. No other instrumentation was identified as part of the inspection.

## *Impounded Water Depth*

On the inspection date, the pond water elevation was recorded at 293.09 ft. The concrete stop logs in the decant structure have been set at an approximate elevation of 302 ft. and have not been adjusted.

## *Storage Capacity*

The remaining storage capacity of the impoundment was approximated to be 167 acre-ft. As part of normal operation, ash collected in the pond is periodically disposed of in the Utility Waste Landfill and a very minimal amount of ash accumulates in the pond.

## *Volumes*

The impounded water is approximated to be 48 acre-ft. The impounded CCR volume was approximated to be 1768 acre-ft. As part of normal operation, ash collected in the pond is periodically disposed of in the Utility Waste Landfill and a very minimal amount of ash accumulates in the pond.

## *Inspection for Structural Weaknesses*

The impoundment was visually inspected for any appearances of an actual or potential structural weakness of the CCR unit. The visual inspection did not indicate any deficiencies. Details of this inspection can be found in the enclosed inspection checklist.

Certification

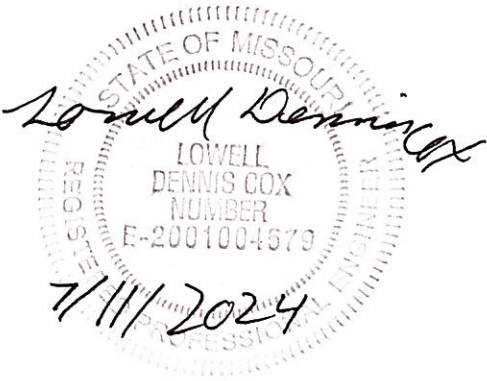
The assessment of the general condition of the surface impoundment is based upon available data and visual observation as required by 40 CFR 257.83 (b) – Inspection Requirements for CCR Surface Impoundments. In reviewing this report, it should be realized that the described condition of the surface impoundment is based on observations of field conditions at the time of inspection. Conditions of surface impoundments depend on numerous internal and external conditions; therefore, it should be noted that the estimates and observations only represent the conditions at the time of inspection.

Signed: Lowell Dennis Cox

Print Name: Lowell Dennis Cox

Missouri License Number: E-2001004579

Date: 7/11/2024



## Dam/Impoundment Evaluation Summary Detail Sheet

<b>1. NID ID:</b> N/A		<b>4. Inspection Date:</b> July 11, 2024	
<b>2. Dam Name:</b> Pond 003		<b>5. Last Insp. Date:</b> July 13, 2023	
<b>3. Dam Location:</b> 41 St. Jude Park, Marston, MO		<b>6. Next Inspection:</b>	
<b>7. Inspector:</b> Dennis Cox, P. E.			
<b>8. Consultant:</b> N/A			
<b>9. Hazard Code:</b>		<b>9a. Is Hazard Code Change Requested?:</b>	
<b>10. Insp. Frequency:</b> Annual		<b>11. Overall Physical Condition of Dam:</b>	
<b>12. Spillway Capacity (% SDF)</b>			
<b>E1. Design Methodology:</b>	4	<b>E7. Low-Level Discharge Capacity:</b>	4
<b>E2. Level of Maintenance:</b>	4	<b>E8. Low-Level Outlet Physical Condition:</b>	4
<b>E3. Emergency Action Plan:</b>	5	<b>E9. Spillway Design Flood Capacity:</b>	N/A
<b>E4. Embankment Seepage:</b>	5	<b>E10. Overall Physical Condition of the Dam:</b>	5
<b>E5. Embankment Condition:</b>	5	<b>E11. Estimated Repair Cost:</b>	N/A
<b>E6. Concrete Condition:</b>	5		

### Evaluation Description

**E1: DESIGN METHODOLOGY**

1. Unknown Design – no design records available
2. No design or post-design analyses
3. No analyses, but dam features appear suitable
4. Design or post design analysis show dam meets most criteria
5. State of the art design – design records available & dam meets all criteria

**E2: LEVEL OF MAINTENANCE**

1. Dam in disrepair, no evidence of maintenance, no O&M manual
2. Dam in poor level of upkeep, very little maintenance, no O&M manual
3. Dam in fair level of upkeep, some maintenance and standard procedures
4. Adequate level of maintenance and standard procedures
5. Dam well maintained, detailed maintenance plan that is executed

**E3: EMERGENCY ACTION PLAN**

1. No plan or idea of what to do in the event of an emergency
2. Some idea but no written plan
3. No formal plan but well thought out
4. Available written plan that needs updating
5. Detailed, updated written plan available and filed with MADCR, annual training

**E4: SEEPAGE (Embankments, Foundations, & Abutments)**

1. Severe piping and/or seepage with no monitoring
2. Evidence of monitored piping and seepage
3. No piping but uncontrolled seepage
4. Minor seepage or high volumes of seepage with filtered collection
5. No seepage or minor seepage with filtered collection

**E5: EMBANKMENT CONDITION**

1. Severe erosion and/or large trees
2. Significant erosion or significant woody vegetation
3. Brush and exposed embankment soils, or moderate erosion
4. Unmaintained grass, rodent activity and maintainable erosion
5. Well maintained healthy uniform grass cover

**E6: CONCRETE CONDITION**

1. Major cracks, misalignment, discontinuities causing leaks, seepage or stability concerns
2. Cracks with misalignment inclusive of transverse cracks with no misalignment but with potential for significant structural degradation
3. Significant longitudinal cracking and minor transverse cracking
4. Spalling and minor surface cracking
5. No apparent deficiencies

**E7: LOW-LEVEL OUTLET DISCHARGE CAPACITY**

1. No low level outlet, no provisions (e.g. pumps, siphons) for emptying pond
2. No operable outlet, plans for emptying pond, but no equipment
3. Outlet with insufficient drawdown capacity, pumping equipment available
4. Operable gate with sufficient drawdown capacity
5. Operable gate with capacity greater than necessary

**E8: LOW-LEVEL OUTLET PHYSICAL CONDITION**

1. Outlet inoperative needs replacement, non-existent or inaccessible
2. Outlet inoperative needs repair
3. Outlet operable but needs repair
4. Outlet operable but needs maintenance
5. Outlet and operator operable and well maintained

**E9: SPILLWAY DESIGN FLOOD CAPACITY**

1. 0 - 50% of the SDF or unknown
2. 50-90% of the SDF
3. 90 - 100% of the SDF
4. >100% of the SDF with actions required by caretaker (e.g. open outlet)
5. >100% of the SDF with no actions required by caretaker

**E10: OVERALL PHYSICAL CONDITION OF DAM**

1. UNSAFE – Major structural, operational, and maintenance deficiencies exist under normal operating conditions
2. POOR - Significant structural, operation and maintenance deficiencies are clearly recognized under normal loading conditions
3. FAIR - Significant operational and maintenance deficiencies, no structural deficiencies. Potential deficiencies exist under unusual loading conditions that may realistically occur. Can be used when uncertainties exist as to critical parameters
4. SATISFACTORY - Minor operational and maintenance deficiencies. Infrequent hydrologic events would probably result in deficiencies.
5. GOOD - No existing or potential deficiencies recognized. Safe performance is expected under all loading including SDF

**E11: ESTIMATED REPAIR COST**

Estimation of the total cost to address all identified structural, operational, maintenance deficiencies. Cost shall be developed utilizing standard estimating guides and procedures

### Changes/Deviations to Database Information since Last Inspection

### DAM SAFETY INSPECTION CHECKLIST

NAME OF DAM: <u>Pond 003</u>	STATE ID #: <u>MO-0001171</u>
REGISTERED: (YES/NO) <u>No</u>	NID ID #: <u>N/A</u>
STATE SIZE CLASSIFICATION: <u>N/A</u>	STATE HAZARD CLASSIFICATION: <u>TBD</u>
	CHANGE IN HAZARD CLASSIFICATION REQUESTED?: (YES/NO) <u>No</u>

#### DAM LOCATION INFORMATION

CITY/TOWN: <u>New Madrid</u>	COUNTY/STATE: <u>New Madrid/Missouri</u>
DAM LOCATION: <u>41 St. Jude Park, Marston, MO</u> (street address if known)	ALTERNATE DAM NAME: <u>N/A</u>
USGS QUAD.: <u>New Madrid, MO-KY</u>	LAT.: <u>36° 30.4' N</u> LONG.: <u>89° 33.5' W</u>
DRAINAGE BASIN: <u>N/A</u>	RIVER: <u>Mississippi River</u>
IMPOUNDMENT NAME(S): <u>Unlined Ash Pond (003 Pond)</u>	

#### GENERAL DAM INFORMATION

TYPE OF DAM: <u>Earthen Incised and Bermed</u>	OVERALL LENGTH (FT): <u>9300</u>
PURPOSE OF DAM: <u>Sedimentation and Storage Basin</u>	NORMAL POOL STORAGE (ACRE-FT): _____
YEAR BUILT: <u>1972</u>	MAXIMUM POOL STORAGE (ACRE-FT): <u>1707</u>
STRUCTURAL HEIGHT (FT): <u>20</u>	EL. NORMAL POOL (FT): <u>299.6</u>
HYDRAULIC HEIGHT (FT): <u>8</u>	EL. MAXIMUM POOL (FT): <u>307.0 (minimum crest elevation)</u>
RESERVOIR SURFACE AREA (ACRES): <u>110</u>	WINTER DRAWDOWN (FT BELOW NORMAL POOL) <u>0.0</u>
PUBLIC ROAD ON CREST: <u>No</u>	DRAWDOWN VOL. (AC-FT) <u>0.0</u>
PUBLIC BRIDGE OVER SPILLWAY: <u>No</u>	

NAME OF DAM: Pond 003 STATE ID #: MO-0001171

INSPECTION DATE: July 11, 2024 NID ID #: N/A

INSPECTION SUMMARY

DATE OF INSPECTION: June 11, 2024 DATE OF PREVIOUS INSPECTION: July 13, 2023

TEMPERATURE/WEATHER: 85 Degrees, Sunny ARMY CORPS PHASE I:  
(YES/NO) If YES, date \_\_\_\_\_

CONSULTANT: N/A PREVIOUS ALT. PHASE I:  
(YES/NO) If YES, date \_\_\_\_\_

BENCHMARK/DATUM: NAVD88

OVERALL PHYSICAL CONDITION OF DAM: \_\_\_\_\_ DATE OF LAST REHABILITATION: N/A

SPELLWAY CAPACITY: \_\_\_\_\_

EL. POOL DURING INSP.: 293.09' EL. TAILWATER DURING INSP.: No Discharge

PERSONS PRESENT AT INSPECTION

<u>NAME</u>	<u>TITLE/POSITION</u>	<u>REPRESENTING</u>
Dennis Cox	Senior Plant Engineer	AECI
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____



NAME OF DAM: Pond 003

STATE ID #: MO-0001171

INSPECTION DATE: July 11th, 2024

NID ID #: N/A

**EMBANKMENT (CREST)**

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
CREST	1. SURFACE TYPE	Gravel access road, Western crest is a paved levee road.			
	2. SURFACE CRACKING	None Observed	X		
	3. SINKHOLES, ANIMAL BURROWS	None Observed	X		
	4. VERTICAL ALIGNMENT (DEPRESSIONS)	None Observed	X		
	5. HORIZONTAL ALIGNMENT	Alignment has not shifted or moved	X		
	6. RUTS AND/OR PUDDLES	None Observed	X		
	7. VEGETATION (PRESENCE/CONDITION)	Crest of embankment is gravel.	X		
	8. ABUTMENT CONTACT	N/A	X		

ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



NAME OF DAM: Pond 003

STATE ID #: MO-0001171

INSPECTION DATE: July 11th, 2024

NID ID #: N/A

**EMBANKMENT (D/S SLOPE)**

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
D/S SLOPE	1. WET AREAS (NO FLOW)	No flow from pond	X		
	2. SEEPAGE	None Observed	X		
	3. SLIDE, SLOUGH, SCARP	None Observed	X		
	4. EMB.-ABUTMENT CONTACT	N/A	X		
	5. SINKHOLE/ANIMAL BURROWS	None Observed	X		
	6. EROSION	None Observed	X		
	7. UNUSUAL MOVEMENT	None Observed	X		
	8. VEGETATION (PRESENCE/CONDITION)	Vegetation on slope has been trimmed and riprap is intact.	X		

ADDITIONAL COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

NAME OF DAM: Pond 003

STATE ID #: MO-0001171

INSPECTION DATE: July 11th, 2024

NID ID #: N/A

**EMBANKMENT (U/S SLOPE)**

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
U/S SLOPE	1. SLIDE, SLOUGH, SCARP	None Observed	X		
	2. SLOPE PROTECTION TYPE AND COND.	Riprap areas are in good condition	X		
	3. SINKHOLE/ANIMAL BURROWS	None Observed	X		
	4. EMB.-ABUTMENT CONTACT	None Observed	X		
	5. EROSION	None Observed	X		
	6. UNUSUAL MOVEMENT	None Observed	X		
	7. VEGETATION (PRESENCE/CONDITION)	Vegetation present on areas exposed last year after ceasing water flow in to the pond.	X		
		Areas include slopes below riprap and bottom of the formally wet portion of the			
		pond. Area has been inspected frequently during winter and spring months and			
		no issues have been observed.			

ADDITIONAL COMMENTS: Previously observed ash stockpiles have been removed.

---

---

---

---

---

---

---

---

NAME OF DAM: Pond 003

STATE ID #: MO-0001171

INSPECTION DATE: July 11th, 2024

NID ID #: N/A

**INSTRUMENTATION**

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
INSTR.	1. PIEZOMETERS	P-1 through P-5	X		
	2. OBSERVATION WELLS	Various monitoring wells at perimeter of unit.	X		
	3. STAFF GAGE AND RECORDER	None present	X		
	4. WEIRS	None present	X		
	5. INCLINOMETERS	None present	X		
	6. SURVEY MONUMENTS	None present	X		
	7. DRAINS	None present	X		
	8. FREQUENCY OF READINGS	Quarterly	X		
	9. LOCATION OF READINGS	Facility's operating record.	X		

ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NAME OF DAM: Pond 003

STATE ID #: MO-0001171

INSPECTION DATE: July 11th, 2024

NID ID #: N/A

**DOWNSTREAM AREA**

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR	
D/S AREA	1. ABUTMENT LEAKAGE	None preset	X			
	2. FOUNDATION SEEPAGE	None preset	X			
	3. SLIDE, SLOUGH, SCARP	None preset	X			
	4. WEIRS	None preset	X			
	5. DRAINAGE SYSTEM	None preset	X			
	6. INSTRUMENTATION	Monitoring wells	X			
	7. VEGETATION	Grass. Woody vegetation between east embankment and Mississippi River	X			
	8. ACCESSIBILITY	Gravel and paved access road along crest. Full time security and fence.	X			
	9. DOWNSTREAM HAZARD DESCRIPTION					
	10. DATE OF LAST EAP UPDATE					

ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NAME OF DAM: Pond 003

STATE ID #: MO-0001171

INSPECTION DATE: July 11th, 2024

NID ID #: N/A

**PRIMARY SPILLWAY**

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
SPILLWAY	SPILLWAY TYPE	Decant structure	X		
	WEIR TYPE	Concrete stoplogs in decant structure.	X		
	SPILLWAY CONDITION	Fair	X		
	TRAINING WALLS	None present	X		
	SPILLWAY CONTROLS AND CONDITION	None present	X		
	UNUSUAL MOVEMENT	None present	X		
	APPROACH AREA	Fair	X		
	DISCHARGE AREA	Fair	X		
	DEBRIS	None present	X		
	WATER LEVEL AT TIME OF INSPECTION	293.09	X		

ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NAME OF DAM: Pond 003

STATE ID #: MO-0001171

INSPECTION DATE: July 11th, 2024

NID ID #: N/A

**OUTLET WORKS**

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
OUTLET WORKS	TYPE	No flow out of the outlet. The outlet pipe is intact and in fair condition	X		
	INTAKE STRUCTURE	Decant structure with stoplogs	X		
	TRASHRACK	N/A	X		
	PRIMARY CLOSURE	N/A	X		
	SECONDARY CLOSURE	N/A	X		
	CONDUIT	N/A	X		
	OUTLET STRUCTURE/HEADWALL	N/A	X		
	EROSION ALONG TOE OF DAM	N/A	X		
	SEEPAGE/LEAKAGE	N/A	X		
	DEBRIS/BLOCKAGE	N/A	X		
	UNUSUAL MOVEMENT	N/A	X		
	DOWNSTREAM AREA	Regularly mowed grassy vegetation. Creek is riprap lined.	X		
MISCELLANEOUS					

ADDITIONAL COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

NAME OF DAM: Pond 003

STATE ID #: MO-0001171

INSPECTION DATE: July 11th, 2024

NID ID #: N/A

**UNDERLYING HYDRAULIC STRUCTURES/PIPES**

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
UNDERLYING HYDRAULIC STRUCTURES /PIPES	TYPE	Underground pipe. No flow through pipe. Pipe appears to be in Fair condition	X		
	INLET	N/A	X		
	CONDUIT	No flow from pipe. Pipe appears to be in Fair Condition	X		
	OUTLET STRUCTURE/HEADWALL	Fair	X		
	EROSION ALONG STRUCTURE	None present	X		
	SEEPAGE/LEAKAGE	None present	X		
	DEBRIS/BLOCKAGE	None present	X		
	UNUSUAL MOVEMENT	None present	X		
	DOWNSTREAM AREA				
	MISCELLANEOUS				

ADDITIONAL COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_