JOHN DAY DAM SPILLWAY

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U.S. ARMY

US Army Corps of Engineers®

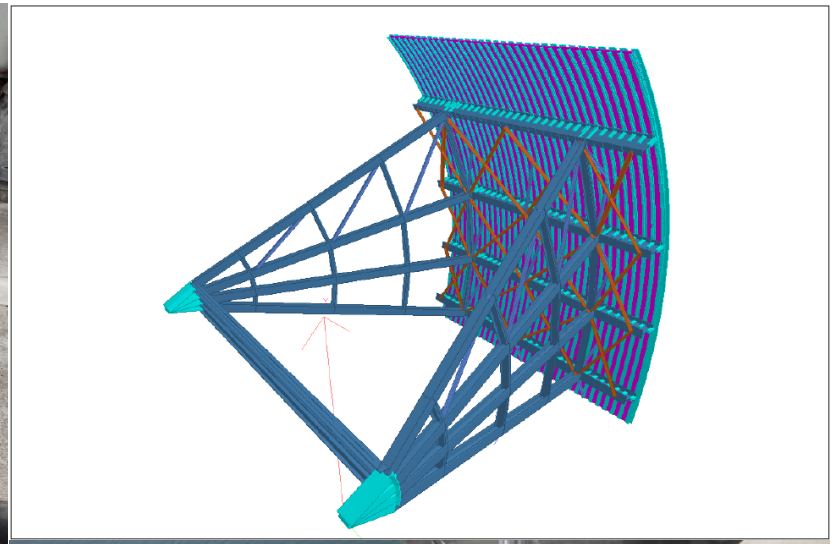
BACKGROUND

Spillway:

- Completed in 1968 (full pool)
- Overall length 1252 ft
- 20 Spillbays
  - spill deflectors bays 2-20
- 20 Tainter gates
  - 50’ x 60’ (w x h)
- 2 Top spillway weirs (TSW’s)
  - spillbays 18 – 19
- 1 Spillway Crane
  - 50 ton capacity
- 2,250,000 cfs capacity

SPILL GATES

- Trunnion Anchors
- Trunnion Pins
- Girders
- Skin Plate
- Gear box
- Cables
- Motor
- Brake assembly
- PLC Controllers



TOP SPILLWAY WEIRS

Stop logs
Weir
Anchorages
Bulkhead
Lifting beam

Permanent install 2013
Last Inspected 2017

SPILLWAY CRANE

Crane Controls
Hoists
Drive System
Cables
Backup Generator
Lifting beam

Name	HydroAMP ID	Age Score	Maintenance Requirements	Design Criteria	Physical Inspection	Adjusted Weighted Score
Spillway Crane	105154	0	0	1	1	2.2

HYDROAMP SCORES

Spillway Gate Operating Equipment Name	HydroAMP ID	Age Score	Maintenance History	Operational Performance	Physical Characteristics	Adjusted Weighted Score	
SG01	142296	1	0	0	0	1	
SG02	142298	1	2	1	1	4	
SG03	142301	1	0	0	0	1	
SG04	142306	1	2	1	1	4	
SG05	142309	1	2	1	1	4	
SG06	142313	1	2	1	1	4	
SG07	142315	1	2	1	1	4	
SG08	142318	1	2	1	1	4	
SG09	142321	1	2	1	1	4	
SG10	142324	1	0	0	0	1	
SG11	142326	1	2	1	1	4	
SG12	142328	1	2	1	1	4	
SG13	142331	1	2	1	1	4	
SG14	142334	1	2	1	1	4	
SG15	142337	1	2	1	1	4	
SG16	142340	1	2	1	1	4	
SG17	142343	1	2	1	1	4	
SG18	142345	1	2	1	1	4	
SG19	142347	1	2	1	1	4	
SG20	142349	1	2	1	1	4	
Spillway PLC	173370	1	0	1	1	2.8	

Maintenance History
- Score 3: Normal maintenance
- Score 2: Some maintenance
- Score 1: Moderate maintenance

Operations Performance
- Score 3: Normal
- Score 2: Adequate
- Score 1: Significantly affected
- Score 0: Severly affected

Physical Characteristics
- Score 3: Good
- Score 2: Fair
- Score 1: Poor
- Score 0: Very poor

AGE
- Score 3: < 50% of Design Lige
- Score 2: ≥ 50% and < 100% of Design Life
- Score 1: ≥ 100% and < 125% of Design

HYDROAMP SCORES

Spillway Gate Structure						
Name	HydroAMP ID	Age Score	Maintenance History	Operational Performance	Physical Characteristics	Adjusted Weighted Score
SG01	142354	1	3	2	2	6.3
SG02	142355	1	3	2	2	6.3
SG03	142357	1	3	2	2	6.3
SG04	142359	1	3	2	2	6.3
SG05	142361	1	3	2	2	6.3
SG06	142363	1	3	2	2	6.3
SG07	142365	1	3	2	2	6.3
SG08	142367	1	3	2	2	6.3
SG09	142369	1	3	2	2	6.3
SG10	142371	1	3	2	2	6.3
SG11	142373	1	3	2	2	6.3
SG12	142375	1	3	2	2	6.3
SG13	142377	1	3	2	2	6.3
SG14	142379	1	3	2	2	6.3
SG15	142381	1	3	2	2	6.3
SG16	142384	1	3	2	2	6.3
SG17	142386	1	3	2	2	6.3
SG18	142388	1	3	2	2	6.3
SG19	142390	1	3	2	2	6.3
SG20	142392	1	3	2	2	6.3

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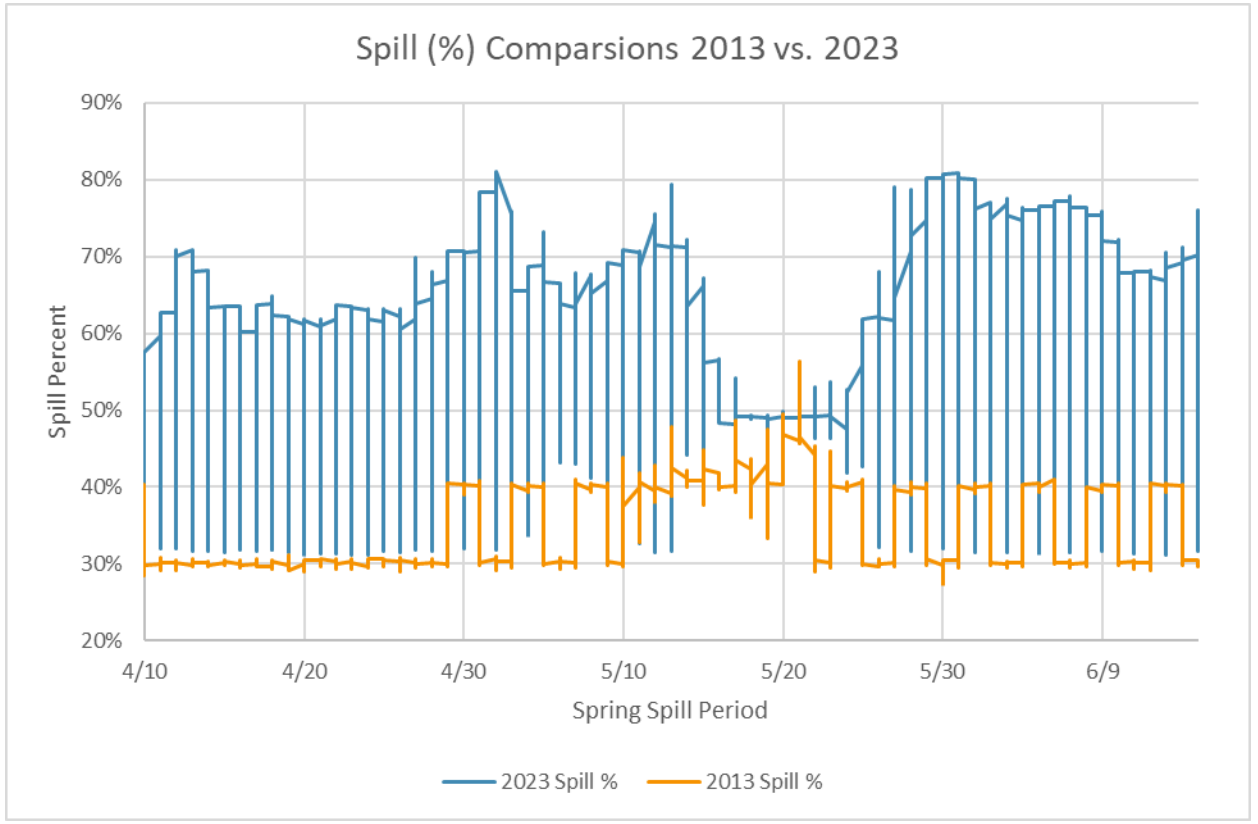
HISTORIC SPRING SPILL OPERATIONS

2008 (Court Order)	2009 (Court Order)	2010 (Court Order)	2011 (Court Order)	2012 (Court Order)	2013 (Court Order)	2014 (2014 BiOp)	2015 (2014 BiOp)
0 day / 60% night	Pre-Test: 30% day/night Testing: 30% day/night vs.40% day/night	Pre-Test: 30% day/night Testing: 30% day/night vs.40% day/night	Pre-Test: 30% day/night Testing: 30% day/night vs.40% day/night	Pre-Test: 30% day/night Testing: 30% day/night vs.40% day/night	Pre-Test: 30% day/night Testing: 30% day/night vs.40 day/night	Pre-Test: 30% day/night Testing 30% day/night vs.40% day/night	Pre-Test (Apr 10-27): 30% day/night Testing (Apr 28-June 15): 30% day/night vs.40% day/night

2016 (2014 BiOp)	2017 (2014 BiOp)	2018 (Court Ordered Injunction)	2019 (Spill Ops. Agreement)	2020 (Spill Ops. Agreement)	2021 (2020 BIOP)	2022 (Stay Agreement)	2023 (Stay Agreement)
Pre-Test (Apr 10-27): 30% day/night Testing (Apr 28-June 15): 30% day/night vs.40% day/night	Pre-Test (Apr 10-28): 30% day/night Testing (Apr 29-June 15): 30% day/night vs.40% day/night	115%/120% Gas Cap day/night	Gas Cap (16-hrs): 120% tailrace TDG spill cap Perf. Standard (8-hrs): 32%	Gas Cap (16-hrs): 120% tailrace TDG spill cap Perf. Standard (8-hrs): 32%	Gas Cap (16-hrs): 120% tailrace TDG spill cap Perf. Standard (8-hrs): 32%	Gas Cap (16-hrs): 125% tailrace TDG spill cap Perf. Standard (8-hrs): 32%	Gas Cap (16-hrs): 125% tailrace TDG spill cap Perf. Standard (8-hrs): 32%

CURRENT SPILL OPERATIONS



SAP SCHEDULE

JDA Summary of Changes in Project Timing

Expenditure Title	Current Project Stage	Submitted Start			Optimized Start			Total Project Cost	Actual Costs < FY23
		Phase 1A	Phase 1	Phase 2	Phase 1A	Phase 1	Phase 2		
JDA Bridge Crane Rails	Stage 1	2026	2027	2028	2024	2025	2026	$791,369	$0
JDA Isophase Bus Connections	Stage 1	2027	2028	2030	2024	2025	2027	$1,135,607	$0
JDA Potable Water System	Stage 1	2024	2025	2026	2023	2024	2025	$1,097,801	$0
JDA Powerhouse Fire Detection and Life Safety	Stage 1	2028	2030	2032	2035	2037	2039	$13,878,373	$0
JDA Powerhouse Septic System Upgrades	Stage 1	2025	2027	2029	2024	2026	2028	$3,918,464	$0
JDA Spillway Gate Brakes and Gearboxes	Stage 1	2025	2026	2027	2025	2027	2028	$3,850,000	$0
JDA Spillway Gate Rehabilitation (Bays 1-10)	Stage 1	2036	2038	2040	2034	2036	2038	$42,840,932	$0
JDA Spillway Gate Rehabilitation (Bays 11-20)	Stage 1	2033	2035	2037	2029	2031	2033	$36,997,277	$0
JDA Station Air System	Stage 1	2026	2027	2028	2033	2034	2035	$2,496,765	$0
JDA Synchronous Condensing Reconfiguration	Stage 1	2026	2027	2029	2027	2028	2030	$1,398,436	$0
JDA Tailrace Crane	Stage 1	2026	2028	2030	2024	2026	2028	$6,747,033	$0
JDA Transformers & Fire Protection	Stage 2		2030	2033		2024	2027	$114,262,833	$790,825
JDA Vibration and Air Gap Monitoring	Stage 1	2025	2026	2028	2024	2025	2027	$4,772,000	$0
JDA XJ Disconnect Switches	Stage 2	2028	2030	2031	2025	2027	2028	$4,816,160	$107,058

JDA Fish Turbines Units project will begin its Phase 1A in FY24 instead of FY23 (as per the SAP).

FY 24 JOINT BUDGET

JOHN DAY LOCK AND DAM, OR & WA	396	JNT	4E+05	Spillway Gate Brakes & Gear Boxes: Bays 1-20 (Plans & Specs)
JOHN DAY LOCK AND DAM, OR & WA	396	JNT	2E+05	Spillway HSS Inspection Support
JOHN DAY LOCK AND DAM, OR & WA	396	JNT	2E+05	CAPJ Rehab Spillway Crane E&D
JOHN DAY LOCK AND DAM, OR & WA	393	JNT	2E+05	JSC - Spillway Trunnion Lubrication System

FY 25 JOINT BUDGET

JOHN DAY LOCK AND DAM, OR & WA	396	JNT	4E+05	Spillway Gate Brakes & Gear Boxes: Bays 1-20 (Plans & Specs)
JOHN DAY LOCK AND DAM, OR & WA	396	JNT	2E+05	Spillway HSS Inspection Support
JOHN DAY LOCK AND DAM, OR & WA	396	JNT	2E+05	CAPJ Rehab Spillway Crane E&D
JOHN DAY LOCK AND DAM, OR & WA	393	JNT	2E+05	JSC - Spillway Trunnion Lubrication System

CONCLUSION

- Equipment past life expectancy and in poor condition
- Current Operation increases likelihood of additional failures
- Funding doesn’t allow proactive maintenance
- Currently Gate 1 failed. Inoperable
- No auto adjust function to Gates 6 & 10

QUESTIONS ??