

# HDC NATIONAL PROGRAM OVERVIEW



16 June 2021

“COMBINED *Meet the Chiefs*”

Steven R. Miles, P.E., PMP  
Director, Hydroelectric Design Center  
U.S. Army Corps of Engineers



US Army Corps  
of Engineers®

# CELEBRATING MR. "BUD" OSSEY - EARNING HIS 75 YR SAME PIN



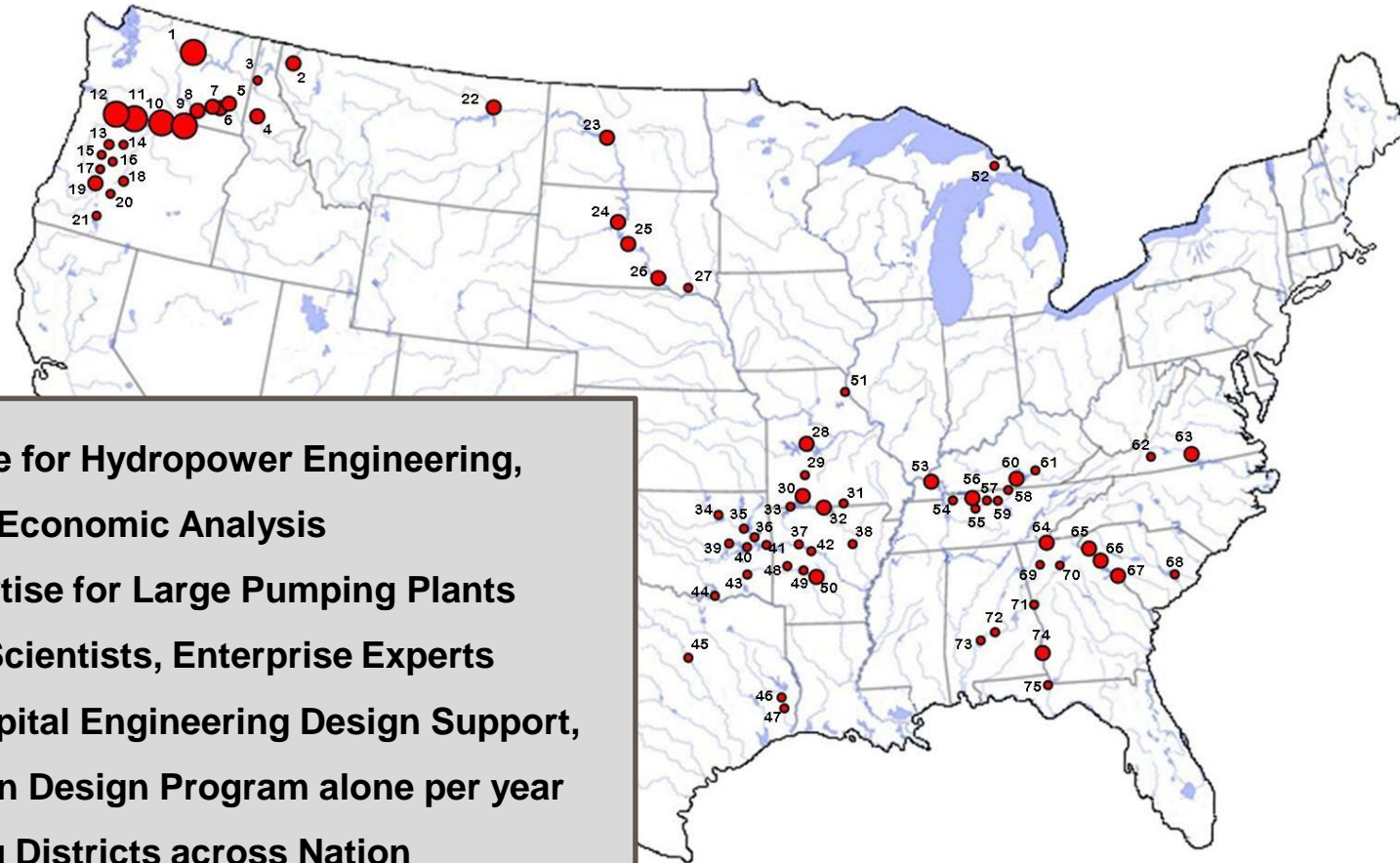
- A real living hero of SAME, now 101, being awarded today the "First-ever 75 yr SAME PIN" by Society President & a "Distinguished FELLOW"
- In July 1946, Mr. Ossey was 1<sup>st</sup> engineer in Corps' hydropower office of the PNW
- In Sept 1937, Mr. Ossey accompanied his father to the Bonneville Dam Dedication ceremony by President Franklin D. Roosevelt, can you spot Bud in the pic?
- Mr. Ossey sends his greetings for a successful MTC - new SAME Scholarship is now in his name, Post raising funds now to secure a \$10,000 partner match.





# The Corps' Hydroelectric Design Center

Portland, Oregon



- Corps' Center of Expertise for Hydropower Engineering, Design, and Planning & Economic Analysis
- Technical Center of Expertise for Large Pumping Plants
- Over 170 Engineers and Scientists, Enterprise Experts
- Responsible for Large Capital Engineering Design Support, \$35M-\$40M in Design Program alone per year
- 16 Hydropower producing Districts across Nation
- 75 Power plants across the country & overseas Contingency
- Mechanical, Electrical, Structural, Computer Engineers  
Computer Scientists, Economists, Mathematicians

on (OK)	47- R.D. Willis/Town Bluff (TX)	57- Cordell Hull (TN)	68- St. Stephens (SC)
Ferry (OK)	<b>MVD:</b>	58- Dale Hollow (TN)	69- Allatoona (GA)
erry (AR)	48- Narrows (AR)	59- Center Hill (TN)	70- Buford (GA)
l (OK)	49- Blakely Mountain (AR)	60- Wolf Creek (KY)	71- West Point (AL/GA)
Falls (OK)	50- DeGray (AR)	61- Laurel (KY)	72- Jones Bluff (AL)
Kerr (OK)	51- Clarence Cannon (MO)	<b>SAD:</b>	73- Millers Ferry (AL)
e (AR)	<b>LRD:</b>	62- Philpott (VA)	74- Walter F. George (AL/GA)
ow (OK)	52- Saint Mary's Falls (MI)	63- John H. Kerr (VA)	75- Jim Woodruff (FL)
TX)	53- Barkley (KY)	64- Carters (GA)	
urn (TX)	54- Cheatham (TN)	65- Hartwell (SC/GA)	
	55- J. Percy Priest (TN)	66- Richard B. Russell (SC/GA)	
	56- Old Hickory (TN)	67- J. Strom Thurmond (SC/GA)	

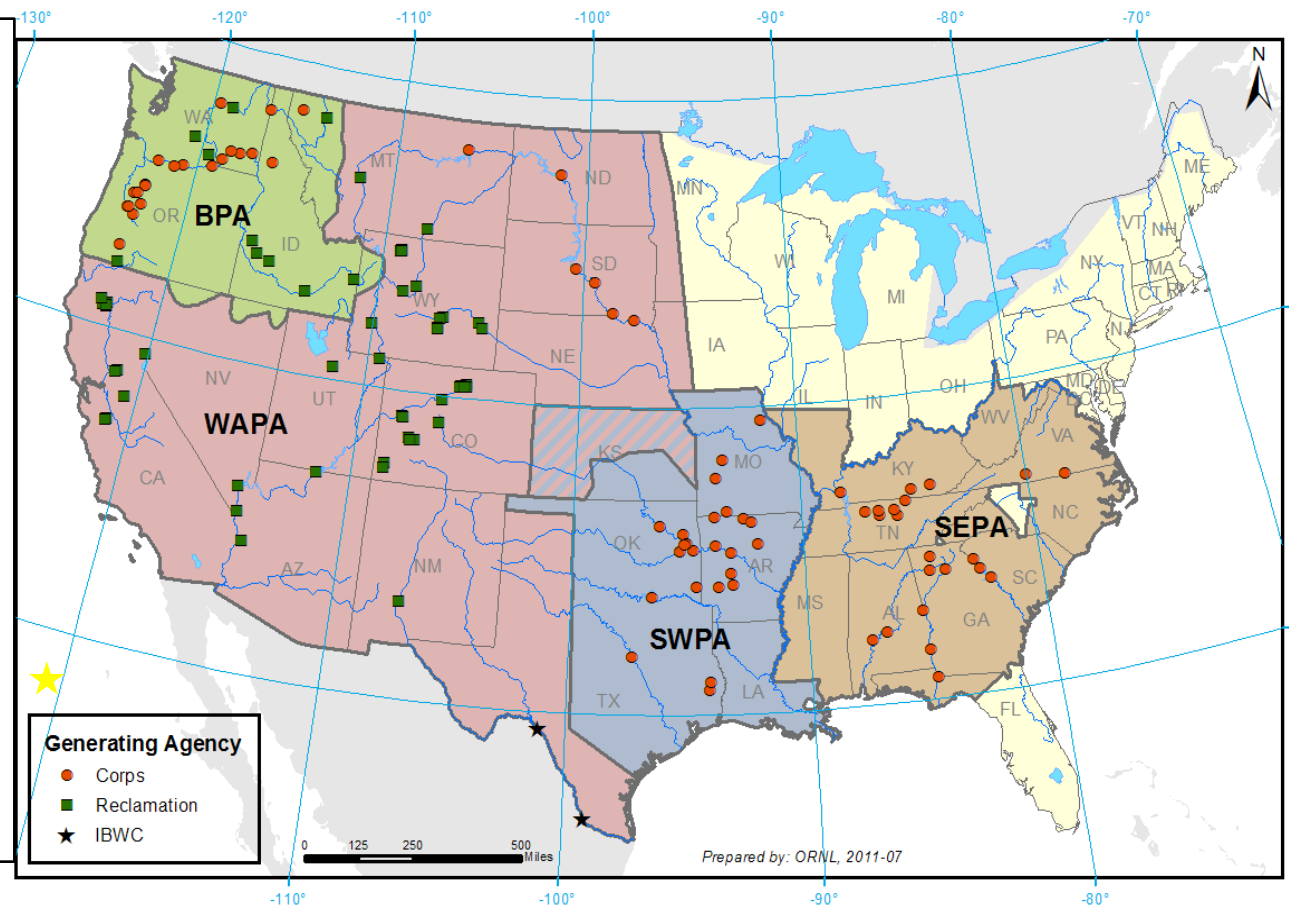
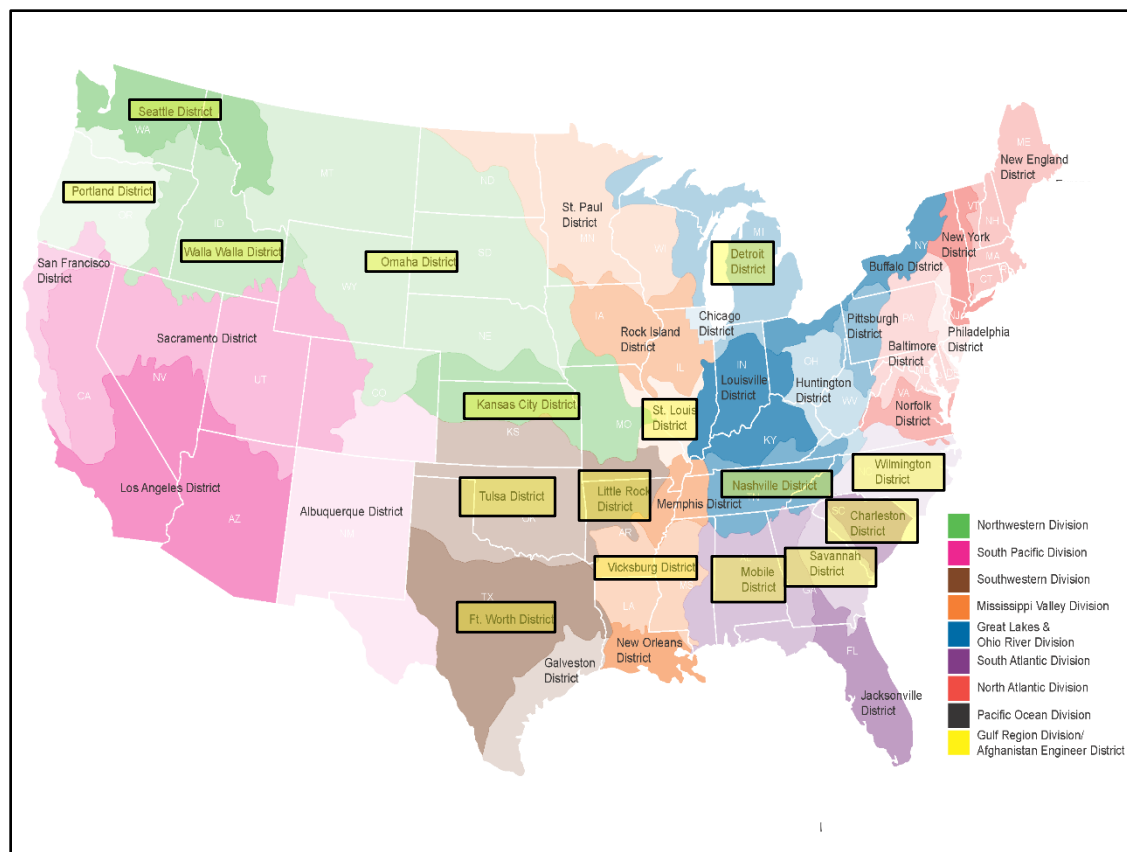


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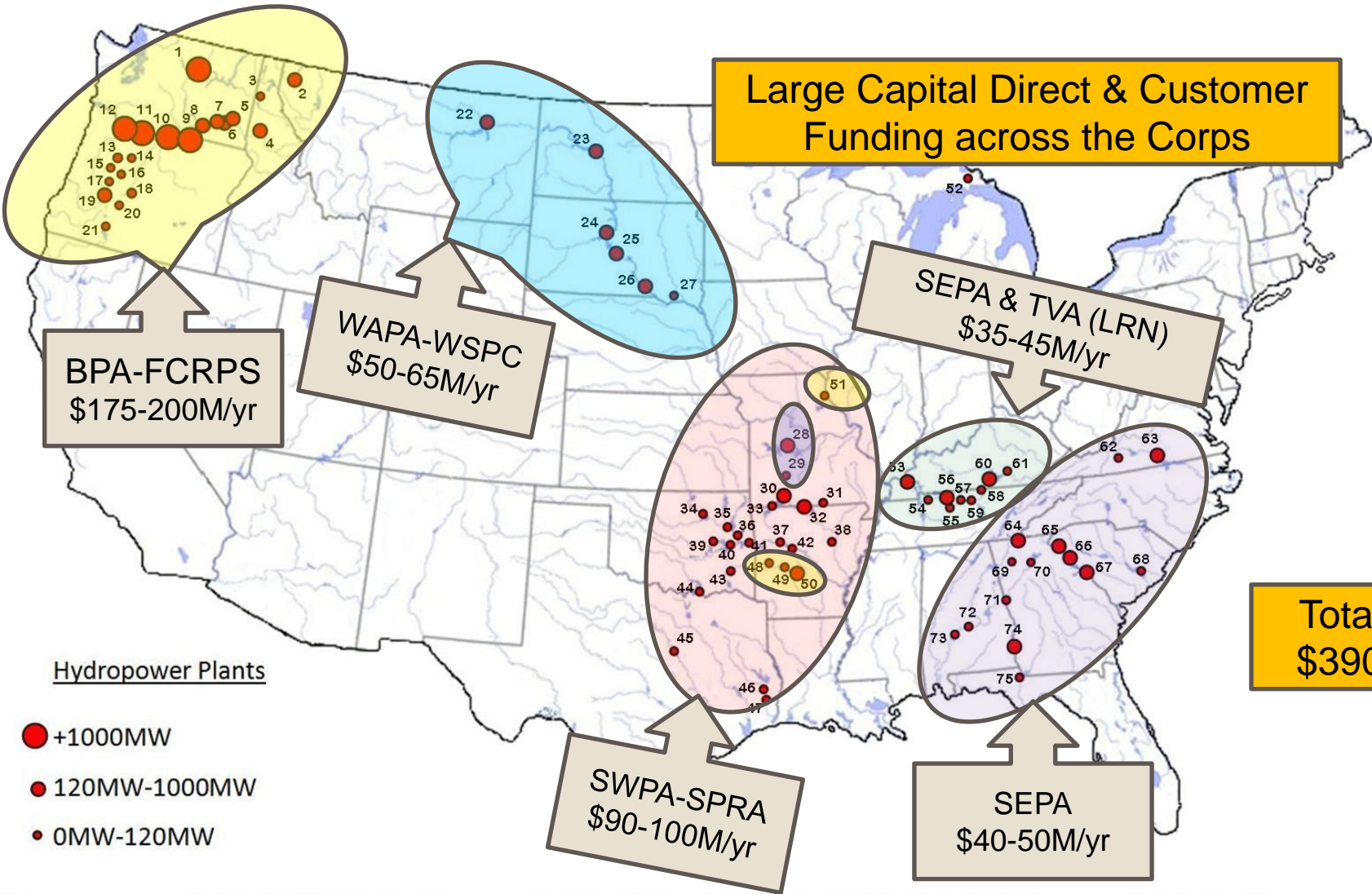
# Our 16 Hydropower Producing Districts

# Our 4 Power Marketing Administration Partners





Large Capital Direct & Customer Funding across the Corps



Hydropower Plants

- +1000MW
- 120MW-1000MW
- 0MW-120MW

**NWD:**

- 1- Chief Joseph (WA)
- 2- Libby (MT)
- 3- Albeni Falls (ID)
- 4- Dworshak (ID)
- 5- Lower Granite (WA)
- 6- Little Goose (WA)
- 7- Lower Monumental (WA)
- 8- Ice Harbor (WA)
- 9- McNary (OR/WA)
- 10- John Day (OR/WA)
- 11- The Dalles (OR/WA)

- 12- Bonneville (OR/WA)
- 13- Big Cliff (OR)
- 14- Detroit (OR)
- 15- Foster (OR)
- 16- Green Peter (OR)
- 17- Dexter (OR)
- 18- Cougar (OR)
- 19- Lookout Point (OR)
- 20- Hills Creek (OR)
- 21- Lost Creek (OR)
- 22- Fort Peck (MT)
- 23- Garrison (ND)

- 24- Oahe (SD)
- 25- Big Bend (SD)
- 26- Fort Randall (SD)
- 27- Gavins Point (SD)
- 28- Harry S. Truman (MO)
- 29- Stockton (MO)
- SWD:**
- 30- Table Rock (MO)
- 31- Norfolk (AR)
- 32- Bull Shoals (AR)
- 33- Beaver (AR)
- 34- Keystone (OK)

- 35- Fort Gibson (OK)
- 36- Tenkiller Ferry (OK)
- 37- Ozark (AR)
- 38- Greers Ferry (AR)
- 39- Eufala (OK)
- 40- Webbers Falls (OK)
- 41- Robert S. Kerr (OK)
- 42- Dardanelle (AR)
- 43- Broken Bow (OK)
- 44- Denison (TX)
- 45- Whitney (TX)
- 46- Sam Rayburn (TX)

- 47- R.D. Willis/Town Bluff (TX)
- MVD:**
- 48- Narrows (AR)
- 49- Blakely Mountain (AR)
- 50- DeGray (AR)
- 51- Clarence Cannon (MO)
- LRD:**
- 52- Saint Mary's Falls (MI)
- 53- Barkley (KY)
- 54- Cheatham (TN)
- 55- J. Percy Priest (TN)
- 56- Old Hickory (TN)

- 57- Cordell Hull (TN)
- 58- Dale Hollow (TN)
- 59- Center Hill (TN)
- 60- Wolf Creek (KY)
- 61- Laurel (KY)
- SAD:**
- 62- Philpott (VA)
- 63- John H. Kerr (VA)
- 64- Carters (GA)
- 65- Hartwell (SC/GA)
- 66- Richard B. Russell (SC/GA)
- 67- J. Strom Thurmond (SC/GA)

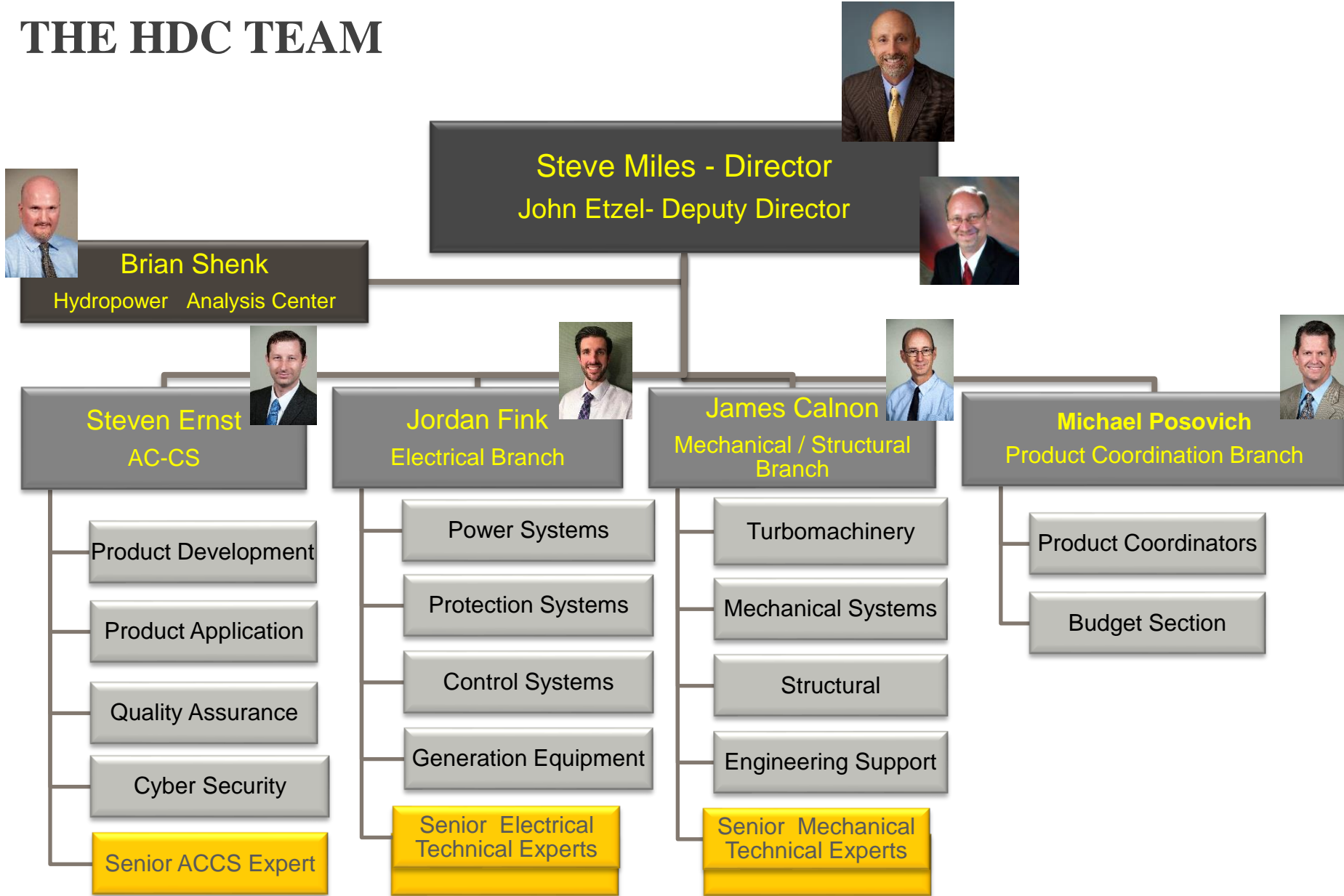
- 68- St. Stephens (SC)
- 69- Allatoona (GA)
- 70- Buford (GA)
- 71- West Point (AL/GA)
- 72- Jones Bluff (AL)
- 73- Millers Ferry (AL)
- 74- Walter F. George (AL/GA)
- 75- Jim Woodruff (FL)



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# THE HDC TEAM





# Generation, Power, Protection Equipment



Generators



Transformers



Circuit Breakers



# Turbomachinery Equipment



Kaplan Runners

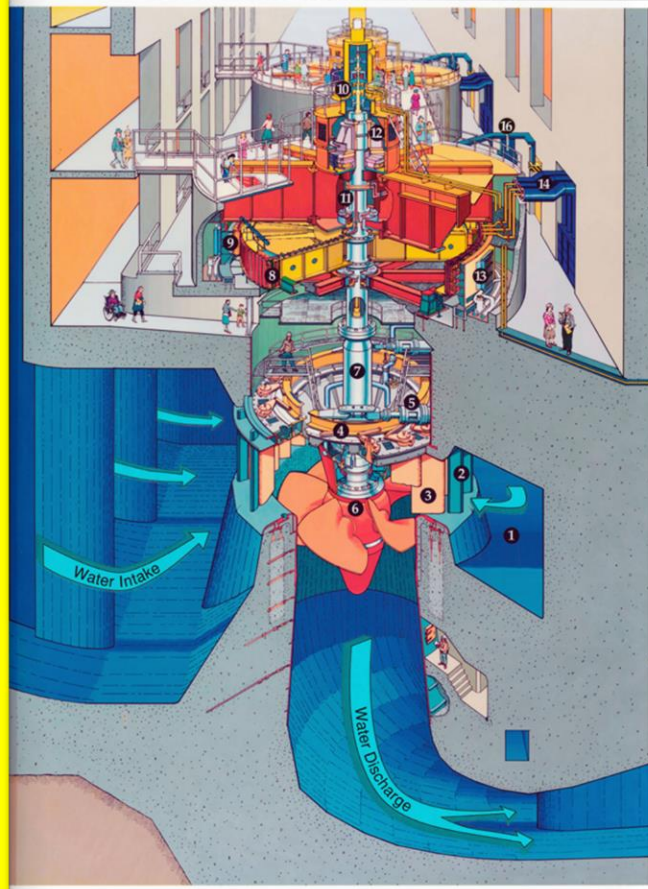


Fish Friendly Runners

# Engineering During Construction

# What we do in HDC...

## An Inside Look...



...at the turbine

...at the generator

- |                        |   |                          |  |
|------------------------|---|--------------------------|--|
| 1. Scroll Case         | Guides water into all Wicket Gate openings.                       | 8. Rotor                 | A rotating set of electromagnets which spin past the stator.                                     |
| 2. Stay Vane Ring      | Guides water into the Wicket Gates.                               | 9. Stator                | Coils of copper strands where electricity is generated.  |
| 3. Wicket Gates        | Movable gates that control water flow over the Turbine blades.    | 10. Oil Head             | Entry point for hydraulic oils, used to vary the wicket blade angle to power the electromagnets. |
| 4. Bull Ring Mechanism | A ring with mechanical arms that open and close the Wicket Gates. | 11. Slip Rings           | Feed current into the spinning Rotor to power the electromagnets.                                |
| 5. Gate Servomotor     | Hydraulic motor that moves the Bull Ring Mechanism.               | 12. Thrust Bearing       | Radiators used to cool air inside the Generator end frame.                                       |
| 6. Kaplan Turbine      | Converts the energy of falling water into a spinning motion.      | 13. Air Cooler           | Main bearing that supports the vertical weight of the rotating Shaft, Rotor and Turbine.         |
| 7. Main Shaft          | Connects the spinning Turbine to the Rotor.                       | 14. Bus Ducts            | Contain copper bars which carry electricity out of the Generator to the transformers.            |
|                        |   | 15. Exciter (not shown)  | Converts 500 volts from the Exciter #15 thru the slip rings #11 to Rotor electromagnets #8.      |
|                        |   | 16. D.C. Bus             |  |
|                        |   | 17. Governor (not shown) |  |

### ...external to the unit

- 15. Exciter (not shown) Charges 15,000 volts AC into 500 volts DC for charging the electromagnet on the Rotor #8.
- 17. Governor (not shown) Sends high pressure oil to the Servomotor #5 and Oil Head #10 for controlling waterflow which determines generator output power.

# Mechanical Systems Equipment



Cranes



Cranes



Governors

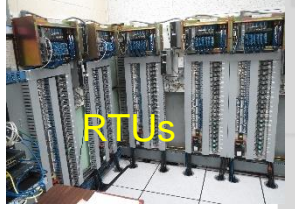


Fire Protection

# ICS & SCADA



Control Rooms



RTUs



Cyber Professionals



Primary and Secondary Controls



# PROJECT SPOTLIGHT

## Barkley Powerplant transforms its switchyard



One of two 90-ton transformers is moved up the boat ramp May 19, 2021 on its way to the switchyard next to the Barkley Dam Powerplant on the Cumberland River in Kuttawa, Kentucky. The U.S. Army Corps of Engineers Nashville District is replacing the transformers in the switchyard that have been in service since 1971. (USACE Photo by Brandon Bouwman)



The Motor Vessel John Wepfer delivers two 90-ton transformers May 18, 2021 to the Barkley Dam Powerplant on the Cumberland River in Kuttawa, Kentucky. (USACE Photo by Lee Roberts)



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# AE OUTSOURCING CONTRACTS



HDC IDIQ Capacity Overview			
		Award Amount	Period of Performance
<b>ACCS</b>			3 Base Years + 2 Option Years
	AUTOMATED CONTROL SYSTEMS, INC (ACSI)	\$2,500,000	4/19/2018 - 4/18/2023
	AITHERAS, LLC DBA AITHERAS	\$2,500,000	4/19/2018 - 4/18/2023
		Total Rema	
<b>Omaha</b>			Base + 4 Option Years
	HDR ENGINEERING INC	\$9,900,000*	11/8/2017 - 11/7/2022
	STANTEC CONSULTING SERVICES INC	\$9,900,000*	11/8/2017 - 11/7/2022
		Total Rema	*shared capacity



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# MAJOR HYDROPOWER MECHANICAL AND ELECTRICAL EQUIPMENT REHABILITATION WORK



Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work

CONTACT	DISTRICT / AREA	PHONE NUMBER
Vinnie DiBlasi	Mobile/ Savannah/ Wilmington/ Charleston	503-808-4214
George Kalli	Fort Worth/Tulsa/Vicksburg/Kansas City/St. Louis	503-808-4535
Adonica Marshall	Omaha	503-808-5276
Meghan Garriques	Seattle	503-808-4410
Eric Vaughn	Willamette Valley/Rogue River	503-808-4223
Andy Long	John Day/Bonneville/ The Dalles	503-808-5290
Larry Haas	Walla Walla	503-808-4279
Ellen Ballantine	Nashville/Detroit	503-250-2981
Beth McNair	Little Rock	503-808-4270

Turbine and Generator.....	3
Excitation System.....	4
Governor.....	5
Crane and Hoist.....	5
Metal Fabrication (Bulkhead, Gate, Platform).....	6
Balance of Plant.....	6
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Electrical Low Voltage (Less than 1,000V).....	8
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Large Power Transformer.....	9
Turbine Oil Accountability and Replacement.....	9
Coolers, Piping, and Large Valves.....	9



U.S. Army Corps of Engineers  
Potential Contracts

## MAJOR HYDROPOWER MECHANICAL AND ELECTRICAL EQUIPMENT REHABILITATION WORK

11 Jun 2021

Hydroelectric Design Center

- Steve Miles, Director ..... 503-808-4200
- John Etzel, Deputy Director ..... 503-808-4210
- Jordan Fink, Electrical Branch Chief ..... 503-808-4275
- Jim Calnon, Mechanical/Structural Branch Chief ..... 503-808-4250
- Steven Ernst, Automated Controls and Cyber Security Branch Chief .. 503-808-3732
- Mike Posovich, Program Integration & Delivery Branch Chief ..... 503-808-4225
- Brian Shenk, Hydropower Analysis Center Chief ..... 503-808-4221




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Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work

**Turbine and Generator**

- Fort Worth: Sam Rayburn – Turbine Rehab, FY25 or later  
2 Kaplan Runner Repl, 180" D, 41,300 HP, 70' Head, 85.7 RPM
- Fort Worth: Sam Rayburn – Generator Rehab, FY23  
2 Rewinds, 31.5MVA
- Kansas City: HS Truman – Generator Rehab, FY24 or later  
6 Rewinds, 28.4 MVA
- Little Rock: Beaver – Units 1 & 2 Rewind, FY322
- Little Rock: Bull Shoals – Turbine and Generator Rehab, FY24 or later  
4 Francis Runner Repl, 152.5" D, 52,000 HP, 190' Head, 128.6 RPM, Potential Uprate  
4 Francis Runner Repl, 152.5" D, 62,000 HP, 190' Head, 128.6 RPM, Potential Uprate  
4 Rewinds, 48.4 MVA, Coils  
4 Rewinds, 54.5 MVA, Coils
- Little Rock: Dardanelle – Cavitation Repairs, FY23
- Little Rock: Norfolk – Turbine and Generator Rehab, FY22  
2 Francis Runner Repl, 145.5" D, 42,000 HP, 160' Head, 128.6 RPM
- Mobile: Allatoona – Turbine Rehab, FY26  
2 Francis Runner Repl, 165" D, 50,000 HP, 135' Head, 112.5 RPM, Potential Uprate
- Mobile: West Point – Turbine Rehab, FY24  
2 Fixed Blade Propeller Repl, 230" D, 51,500 HP, 58' Head, 100 RPM, Potential Uprate
- Mobile: West Point – U1 Generator Rewind, FY23  
1 Rewind, Francis, 3.75 MVA, Coil
- Nashville: Old Hickory – Turbine and Generator Rehab, FY22  
4 Kaplan Runner Repl, 264" D, 35,000 HP, 45' Head, 75 RPM, Potential Uprate   
3 Rewinds, 36MVA, Coil
- Nashville: Wolf Creek – Turbine and Generator Rehab, FY25  
6 Francis Runner Repl, 175" D, 62,500 HP, 160 Head, 105.9 RPM, Potential Uprate  
4 Rewinds, 50 MVA, Coils
- Omaha: Fort Randall – Generator and Turbine Rehab, FY22  
8 Francis Runner Repl, 204" D, 57,500 HP, 112' Head, 85.7 RPM, Potential Uprate  
8 Rewinds, 48.4 MVA, Coils
- Omaha: Fort Peck – Powerhouse 2 Unit Rehab, FY23  
2 Francis Runner Repl, 155.5" D, 63,500 HP, 170' Head, 128.6 RPM, Potential Uprate
- Portland: John Day – Turbine Replacement and Generator Rewind, FY23 or later  
16 Kaplan Runner Repl, 312" D, 212,400 HP, 94' Head, 90 RPM, Potential Uprate, Fixed and adjustable blade alternatives being considered  
16 Rewinds, 163 MVA, Bars, Potential Uprate
- Portland: Willamette Valley: Foster – Turbine Refurbishment, FY23  
2 Kaplan refurb, 95" D, Refurbish blade operating mechanisms, Generator Repair



Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work

- Seattle: Chief Joseph – Generator Rewind Units 1-16, FY22  
16 Rewinds, Francis, 92,000 kVA, Coil windings
- Seattle: Chief Joseph – Station Service Units Turbine Rehab and Generator Rewind, FY22  
2 Francis, 39" D, 3,500 HP, 171' Head, 514 RPM, Rehabilitation  
2 Rewinds, 3 MVA, 4,160 V
- Seattle: Libby – 6<sup>th</sup> Generator Unit, FY23 or later  
1 new Unit, Francis, 110 MVA
- Tulsa: Denison – Station Service Units Rehab or Replace, FY23 or later  
2 600 kW turbines
- Tulsa: Keystone – Turbine Rehab, FY24 or later  
2 Fixed Blade, 192.25" D, 49,000 HP, 74' Head, 120 RPM
- Tulsa: Eufaula Generator Rewind, FY23 or later

**Excitation System**

- Fort Worth: Sam Rayburn – Generation Excitation System, FY23
- Little Rock: Bull Shoals – Exciter Retrofit, FY23-24  
4 – 8 Units, Potential Uprate
- Mobile: West Point – U1 Exciter Replacement, FY23  
1 Unit, under investigation
- Portland: John Day Exciter Replacement, FY23 or later  
16 Units, under investigation
- Portland: The Dalles Exciter Control, FY23 or later  
21 Units, under investigation
- Seattle: Chief Joseph – Station Service Unit Exciter, FY23  
2 Units, Supply and Install, Static to Static
- Seattle: Chief Joseph – Unit 1-16 Exciter, FY23  
16 Units, Supply & Install, Static to Static
- Tulsa: Broken Bow – Exciter Voltage Regulator Replacement, FY23 or later  
2 Units, under investigation
- Tulsa: Denison – Excitation System Replacement, FY24 or later  
2 Units, under investigation
- Tulsa: Fort Gibson – Exciter Voltage Regulator Replacement, FY23 or later  
4 Units, under investigation
- Tulsa: RS Kerr – Excitation System Replacement, FY24 or later  
4 Units, under investigation
- Tulsa: Tenkiller Ferry – Excitation System Replacement, FY24 or later  
2 Units, under investigation
- Tulsa: Webbers Falls – Excitation System Replacement, FY24 or later  
2 Units, under investigation





*Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work*

**Governor**

Little Rock: Greers Ferry- Governor Rehab, FY23  
 Omaha: Fort Peck – Digital Governor Replacement, FY21  
 5 Francis Units, Governor Install, GFE Supply  
 Portland: Bonneville: Powerhouse 1- Digital Governor Replacement, FY22 or later

**Crane and Hoist**

Ft. Worth: Sam Rayburn – Draft Tube Crane, FY23  
 Kansas City: H.S. Truman – Draft Tube Crane, FY23 or later  
 Little Rock: Beaver – Bridge Crane Rehab, FY22  
 Little Rock: Bull Shoals – Bridge Cranes Rehab, FY21-22  
 Little Rock: Dardanelle Bridge crane Rehab FY222  
 Little Rock: Greers Ferry Bridge Crane Rehab FY23  
 Little Rock: Norfolk – Intake Gate Machinery Rehab, FY23  
 Little Rock: Table Rock – Bridge Crane Rehab FY23  
 Little Rock: Table Rock – 20-Ton Tailrace Crane, FY22  
 Mobile: Allatoona – Headgates Machinery and Controls Rehab, FY22  
 Mobile: Buford – Headgates Machinery and Controls Rehab, FY22  
 Mobile: Walter F George – Headgates Machinery and Controls Rehab, FY23  
 Mobile: West Point – Headgates Machinery and Controls Rehab, FY23  
 Nashville: Old Hickory Intake Crane, FY21  
 Omaha: Big Bend – 60-Ton Intake Gantry Cranes Replacement, FY22  
 Omaha: Fort Randall – Intake Crane, FY22  
 Portland: Bonneville – Powerhouse 2, 65-Ton Tailrace Gantry Crane Replacement, FY21  
 Portland: Bonneville – Headgate Repair Pit Rehab, FY22  
 Portland: Willamette Valley – Big Cliff 40-Ton Intake Gantry Crane, FY21  
 Portland: Willamette Valley – Green Peter 180-Ton Bridge Crane Replacement, FY22  
 Savannah: RB Russell – Bridge Crane Rehab, FY24  
 Savannah: RB Russell – Draft Tube Crane Replacement, FY24  
 Seattle: Albeni Falls – 250-Ton Powerhouse Bridge Crane, FY23 or later  
 Seattle: Libby – 75-Ton Intake Gantry Crane Rehab, FY21  
 Tulsa: Denison – Intake Hoist Replacement, FY22  
 Tulsa: Eufaula – Draft Tube Crane Rehab, FY22  
 Tulsa: Eufaula – Bridge Crane Rehab, FY23 or later  
 Tulsa: Fort Gibson – Draft Tube Crane Rehab, FY24 or later  
 Tulsa: Fort Gibson – Intake Gates and Hoists, FY24 or later  
 Tulsa: Fort Gibson – Bridge Crane Rehab, FY23 or later  
 Tulsa: Keystone – Draft Tube Crane Rehab, FY23 or later



*Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work*

Tulsa: Keystone – Bridge Crane Rehab, FY23 or later  
 Tulsa: RS Kerr – Intake Crane Rehab, FY21  
 Walla Walla: McNary – Intake Gate Hydraulic System Rehab, FY21

**Metal Fabrication (Bulkhead, Gate, Platform)**

Fort Worth District: HSS Gates and Bulkheads, FY24  
 Mobile: Allatoona – Headgate and Machinery Rehab, FY22  
 Mobile: Buford – Headgate and Machinery Rehab, FY22  
 Mobile: Walter F. George – Headgate and Machinery Rehab, FY23  
 Mobile: West Point – Headgate and Machinery Rehab, FY23  
 Omaha: Gavins Point – Tailrace Draft Tube Gate Refurbishment, FY22  
 Omaha: Oahe – Tailrace Bulkhead Rehab, FY22  
 Portland: Bonneville – Powerhouse 1 Trash Racks Replacement, FY21  
 Portland: John Day – Trash Racks Replacement, FY21  
 Portland: Willamette Valley –Big Cliff Intake Gates and Trash Racks Replacement, FY24  
 Portland: Willamette Valley –Detroit Intake Gates Replacement and Trash Racks Rehab., FY24  
 Seattle: Albeni Falls – Turbine Maintenance Platform, FY22  
 Seattle: Chief Joseph – Intake Gates Rehab or Replacement, FY24  
 Seattle: Chief Joseph – Turbine Maintenance Platform, FY22  
 Tulsa: Denison – Intake Gates and Hoists Replacement, FY22  
 Tulsa: Fort Gibson – Intake Gates and Hoists, FY24  
 Vicksburg: DeGray – Intake Gate Cylinders and Gate Hoists, FY23 or later  
 Walla Walla: Ice Harbor – Intake Gate Hydraulic System Upgrades, FY22  
 Walla Walla: Lower Monumental and Lower Granite – Turbine Maintenance Platforms, FY21

**Balance of Plant**

Omaha: Big Bend – Station Service Air/Depressing Air System Upgrade, FY23  
 Portland: John Day – Top Plate Pump, FY22  
 Seattle: Chief Joseph – Powerhouse Sump Pump and Controls, FY23  
 Seattle: Chief Joseph – Spillway Sump Pump and Controls, FY22







*Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work*

**Fire Suppression & Fire Protection/Detection**

Ft. Worth: Sam Rayburn – Fire Protection System Replacement, FY23 or later  
 Kansas City: Stockton – Fire Protection System Replacement, FY23 or later  
 Kansas City: HS Truman – Fire Protection System Replacement, FY23 or later  
 Little Rock: Norfolk - Fire Suppression System Replacement, FY24  
 Mobile: Buford – Generator Fire Suppression System Replacement, FY24  
 Mobile: Carters – Generator Fire Suppression System Replacement, FY23  
 Mobile: Jones Bluff (RF Henry) – Generator Fire Suppression System, FY25  
 Portland: Bonneville – Powerhouse 1&2 Oil Storage Room Fire Protection Upgrades (Remove CO<sub>2</sub> and install Clean Agent), FY20  
 Portland: Willamette Valley – Dexter Fire Detection/HVAC/Life Safety, FY24  
 Savannah: Hartwell – Transformer Fire Suppression System, FY26

**Controls**

Ft. Worth: Sam Rayburn – SER and Annunciation System, FY23 or later  
 Mobile: Buford - Powerhouse Controls Upgrades, FY26  
 Mobile: Carters - Powerhouse Controls Upgrades, FY27  
 Mobile: J. Woodruff - Powerhouse Controls Upgrades, FY25  
 Mobile: Jones Bluff - Powerhouse Controls Upgrades, FY26  
 Mobile: Millers Ferry - Powerhouse Controls Upgrades, FY25  
 Mobile: Walter F. George - Powerhouse Controls Upgrades, FY21  
 Mobile: West Point - Powerhouse Controls Upgrades, FY23  
 Portland: The Dalles – Control Room Modernization, FY23  
 Savannah: Hartwell – Powerhouse Controls Upgrades – FY22  
 Savannah: Richard B. Russell – Powerhouse Controls Upgrades – FY22  
 Savannah: J. Strom Thurmond – Powerhouse Controls Upgrades – FY24  
 Walla Walla: Little Goose – Powerhouse Controls/Annunciation, FY23  
 Walla Walla: Lower Granite – Powerhouse Controls/Annunciation, FY24  
 Walla Walla: Lower Monumental – Powerhouse Controls/Annunciation, FY24  
 Wilmington: J.H. Kerr – Powerhouse Controls Upgrades, FY22  
 Wilmington: Philpott – Powerhouse Controls Upgrades, FY23

**DC/Preferred AC Systems**

Nashville: Barkley – DC/Preferred AC Systems Install, FY24 or later  
 Nashville: Cheatham – DC/Preferred AC Systems Install, TBD  
 Nashville: Old Hickory – DC/Preferred AC Systems Install, FY21 or later  
 Seattle: Libby – DC/Preferred AC System Refurbishment/Replacement, FY22



*Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work*

Walla Walla: Little Goose – DC System and Low Voltage Switchgear Replacement, FY22  
 Walla Walla: Lower Monumental – DC System and Low Voltage Switchgear Replace., FY22

**Electrical Low Voltage (Less than 1,000V)**

Kansas City: Stockton – 480V Switchgear and MCC Replacement, FY23  
 Little Rock: Bull Shoals – Low Voltage Switchgear Replacement, FY23  
 Little Rock: Dardanelle – Low Voltage Switchgear Replacement, FY24  
 Little Rock: Greers Ferry – Low Voltage Switchgear Replacement, FY24  
 Omaha: Oahe – Aux Unit MCC Replacement, FY21  
 Savannah: R.B. Russell – Motor Control Center, FY23  
 Seattle: Chief Joseph – 480V Station Power SQ 4&5 Replacement, FY23 or later  
 Seattle: Chief Joseph – 480V Station Power SU 1-4 Replacement, FY22  
 Tulsa: Eufaula – Motor Control Centers Replacement, FY22  
 Tulsa: Fort Gibson – 480V Switchgear and Transformers, FY22 or later  
 Tulsa: Tenkiller Ferry – Station Service System and Transformer Feeders Replacement, FY24  
 Vicksburg: Narrows – 480V Switchgear and MCC Replacement, FY23

**Electrical Medium Voltage (More than 1,000V)**

Ft. Worth: Sam Rayburn – 15kV Switchgear Replacement, FY23  
 Little Rock: Bull Shoals – Units 1-4, 15kV Breakers, FY23  
 Little Rock: Norfolk – 161kV GCB Replacement, FY23  
 Mobile: Millers Ferry – 15kV Switchgear Installation, FY22  
 Mobile: West Point – Generator Switchgear Supply and Installation, FY23  
 Nashville: Center Hill Medium Voltage Cables, FY21  
 Nashville: Cheatham Medium Voltage Cables, FY22  
 Nashville: Dale Hollow – Station Service Rehab, TBD  
 Nashville: Center Hill Station Service, FY25 or later  
 Nashville: Old Hickory Station Service, FY22 or later  
 Nashville: Old Hickory Switchyard Cable and Conduit Replacement, FY21  
 Omaha: Fort Peck – Switchyard Rehab, FY28  
 Omaha: Big Bend – Generator Breaker Replacement, FY23  
 Portland: Willamette Valley – Foster Electrical Reliability (Station Service) Upgrade, FY21  
 Portland: Willamette Valley – Green Peter Electrical Reliability (Station Service) Upgrade, FY23  
 Portland: Willamette Valley – Hills Creek Electrical Reliability (Station Service) Upgrades, FY21  
 Seattle: Albeni Falls – Emergency Diesel Generator, FY25  
 Seattle: Chief Joseph – Isophase Bus Rehab Unit 1-16, FY22  
 Seattle: Chief Joseph – Isophase Bus Rehab Unit 17-27, FY23 or later  
 Tulsa: Denison – Switchyard Power Circuit Breaker Replacement, FY22  
 Vicksburg: Blakely Mountain – Oil Circuit Breaker Replacement, FY22/23





*Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work*

Walla Walla: Little Goose – DC System and Low Voltage Switchgear Replacement, FY22  
Walla Walla: Lower Monumental – DC System and Low Voltage Switchgear Replace., FY22

**Electrical Low Voltage (Less than 1,000V)**

Kansas City: Stockton – 480V Switchgear and MCC Replacement, FY23  
Little Rock: Bull Shoals – Low Voltage Switchgear Replacement, FY23  
Little Rock: Dardanelle – Low Voltage Switchgear Replacement, FY24  
Little Rock: Greers Ferry – Low Voltage Switchgear Replacement, FY24  
Omaha: Oahe – Aux Unit MCC Replacement, FY21  
Savannah: R.B. Russell – Motor Control Center, FY23  
Seattle: Chief Joseph – 480V Station Power SQ 4&5 Replacement, FY23 or later  
Seattle: Chief Joseph – 480V Station Power SU 1-4 Replacement, FY22  
Tulsa: Eufaula – Motor Control Centers Replacement, FY22  
Tulsa: Fort Gibson – 480V Switchgear and Transformers, FY22 or later  
Tulsa: Tenkiller Ferry – Station Service System and Transformer Feeders Replacement, FY24  
Vicksburg: Narrows – 480V Switchgear and MCC Replacement, FY23

**Electrical Medium Voltage (More than 1,000V)**

Ft. Worth: Sam Rayburn – 15kV Switchgear Replacement, FY23  
Little Rock: Bull Shoals – Units 1-4, 15kV Breakers, FY23  
Little Rock: Norfolk – 161kV GCB Replacement, FY23  
Mobile: Millers Ferry – 15kV Switchgear Installation, FY22  
Mobile: West Point – Generator Switchgear Supply and Installation, FY23  
Nashville: Center Hill Medium Voltage Cables, FY21  
Nashville: Cheatham Medium Voltage Cables, FY22  
Nashville: Dale Hollow – Station Service Rehab, TBD  
Nashville: Center Hill Station Service, FY25 or later  
Nashville: Old Hickory Station Service, FY22 or later  
Nashville: Old Hickory Switchyard Cable and Conduit Replacement, FY21  
Omaha: Fort Peck – Switchyard Rehab, FY28  
Omaha: Big Bend – Generator Breaker Replacement, FY23  
Portland: Willamette Valley – Foster Electrical Reliability (Station Service) Upgrade, FY21  
Portland: Willamette Valley – Green Peter Electrical Reliability (Station Service) Upgrade, FY23  
Portland: Willamette Valley – Hills Creek Electrical Reliability (Station Service) Upgrades, FY21  
Seattle: Albeni Falls – Emergency Diesel Generator, FY25  
Seattle: Chief Joseph – Isophase Bus Rehab Unit 1-16, FY22  
Seattle: Chief Joseph – Isophase Bus Rehab Unit 17-27, FY23 or later  
Tulsa: Denison – Switchyard Power Circuit Breaker Replacement, FY22  
Vicksburg: Blakely Mountain – Oil Circuit Breaker Replacement, FY22/23



*Potential USACE Contracts for  
Major Hydropower Mechanical and Electrical Equipment Rehabilitation Work*

Vicksburg: DeGray – Oil Circuit Breaker Replacement, FY22/23  
Vicksburg: Narrows – Oil Circuit Breaker Replacement, FY22/23  
Walla Walla: McNary – Isophase Bus Upgrade, FY22

**Large Power Transformer**

Little Rock: Bull Shoals – Main Unit Transformer Supply, FY23  
Little Rock: Bull Shoals – Modernization Elect: Install, FY23  
Little Rock: HV Breakers, Bus, Transformer Install  
Little Rock: Ozark – GSU Transformer Repairs, FY23  
Mobile: West Point – U1 Transformer Replacement, FY23  
Nashville: Old Hickory – Main Power Transformer Install, FY22  
Nashville: Wolf Creek – Main Power Transformer Supply and Install, FY22  
Portland: Willamette Valley – Detroit Main Unit Transformer Replacement Supply, FY22  
Portland: Willamette Valley – Detroit Main Unit Transformer Replacement Install, FY23  
Seattle: Albeni Falls – GSU Transformer Replacement Installation, FY21  
Seattle: Libby – Transformer Refurbishment (T1), FY23 or later  
Tulsa: Keystone – GSU Rehab/Replacement, FY24 or later  
Wilmington: Island Creek – Transformer Replacement, FY23

**Turbine Oil Accountability and Replacement**

Portland: The Dalles – Oil Accountability Measures, FY22  
Portland: Willamette Valley – Foster Oil Spill Prevention System, FY21  
Portland: Willamette Valley – Dexter Oil Spill Prevention System, FY23  
Seattle: Chief Joseph – Turbine Oil and Piping Replacement, FY21 or later

**Coolers, Piping, and Large Valves**

Little Rock: Greers Ferry – Unwatering pump Controls, Piping, and Valves, FY23  
Omaha: Fort Peck – Butterfly Valve Rehab, FY22.  
Portland: Willamette Valley – Cougar Butterfly Valves Replacement or Rehab, FY21  
Seattle: Chief Joseph – Turbine Oil and Piping Replacement, FY21 or later  
Tulsa: Denison Penstock/Expansion Joint and Drain Valve, FY23  
Tulsa: Keystone Unit 2 Penstock Expansion Joint, FY23  
Tulsa: Tenkiller Ferry – Butterfly Valves Replacement, FY21





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## Questions & Comments?



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