County of Los Alamos

1000 Central Avenue
Los Alamos, NM 87544

Agenda - Final

Board of Public Utilities Work Session

Cornell Wright, Chair; Steve Tobin, Vice-chair;
Stephen McLin, Eric Stromberg, and Charles Nakhleh, Members
Philo Shelton, Ex Officio Member
Steven Lynne, Ex Officio Member
Denise Derkacs, Council Liaison

Wednesday, August 3, 2022 **5:30 PM** **Zoom: https://us06web.zoom.us/j/81509833643**

REMOTE MEETING

Members of the public wishing to attend may participate and provide public comment via Zoom:

Webinar Link: https://us06web.zoom.us/j/81509833643 **Webinar ID:** 815 0983 3643
One tap mobile :
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PUBLIC COMMENTS:
Please email written comments to bpu@lacnm.us. Oral public comment is accepted during the two periods identified on the agenda and after initial board discussion on a business item, prior to accepting a main motion on an item. Comments should be limited to four minutes per person. Requests to make comments exceeding four minutes should be submitted to the board in writing prior to the meeting. Individuals representing or making a combined statement for a large group may be allowed additional time at the discretion of the Board. Those making comments are encouraged to submit them in writing either during or after the meeting to be included in the minutes as attachments. Otherwise, comments will be summarized in the minutes.

1. CALL TO ORDER

2. PUBLIC COMMENT

This section of the agenda is reserved for comments from the public on Consent Agenda items or items that are not otherwise included in this agenda.

3. APPROVAL OF AGENDA

4. BUSINESS & PRESENTATIONS

4.A. 15887-22 Quarterly Update on Utility System: Electric Production - Hydroelectric Facilities

Pages 3 - 80

Presenters: Jordan Garcia, Deputy Utilities Manager - Electric Production

4.B. 15801-22 Quarterly Update on Utility System - Electric Distribution

Pages 81 - 133

Presenters: Stephen Marez, Deputy Utilities Manager - Electric Distribution

5. PUBLIC HEARING(S)

5.A. CO0643-22-b

Pages 134 - 159

Incorporated County of Los Alamos Code Ordinance No. 02-329; An Ordinance Amending Chapter 40, Article III, Sections 40-151, and 40-152 of the Code of the Incorporated County of Los Alamos Pertaining to Gas Service Rates.

Presenters: Heather Garcia, Deputy Utilities Manager - Finance

6. ADJOURNMENT

If you are an individual with a disability who needs a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing or meeting, please contact Human Resources at 505-662-8040 as soon as possible.

Complete BPU agenda packets, past agendas, videos, legislation, and minutes are available online at https://losalamos.legistar.com. Learn more about the BPU at https://ladpu.com/BPU.

Agenda No.:	4.A.
Index (Council Goals):	DPU FY2020 - 1.0 Provide Safe and Reliable Utility Services
Presenters:	Deputy Utilities Manager - Electric Production Jordan Garcia, Deputy Utilities Manager - Electric Production
Legislative File:	**15887-22**

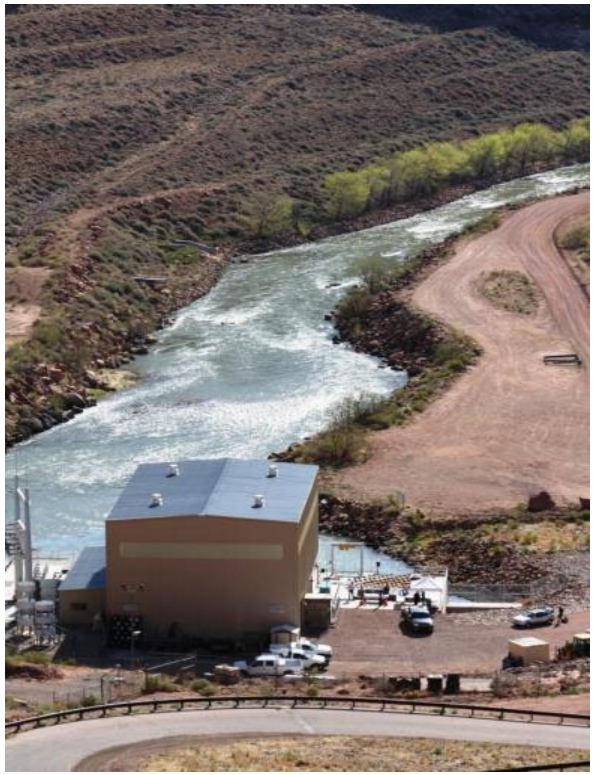
Title
Quarterly Update on Utility System: Electric Production - Hydroelectric Facilities

Body
This quarterly update will provide a high level overview of the Electric Production operation and power generation assets. The Department of Public Utilities operates and manages the electric production assets to serve its customers with affordable, reliable and safe electric service. This is accomplished through multiple contracts, a mix of power generation resources along with the transmission and the distribution system network to serve our customers.

The assets include the San Juan Generating Station near Farmington New Mexico operated by the Public Service Company of New Mexico and the Laramie River Station located in Wheatland Wyoming operated by Basin Electric Power Cooperative. The County owned and operated renewable assets include the Solar PV array and hydroelectric facilities at the Abiquiu and El Vado reservoirs located in Northern New Mexico.

Attachments
A - Electric Production Hydroelectric Facilities Asset Management
B - 2022 Electric Production Operations Briefing

Electric Production Hydroelectric Facilities Asset Management



August 3, 2022
Board of Public Utilities
Adam Cooper

LOS ALAMOS

Contents

- Facilities Overview
- Hydro Plants Operations
- Asset Management
- 10 Year Capital Improvement Plan
- Federal Partners Projects
- Performance Metrics
- Future Concerns
- Questions?

Electric Production
AMT MEMBERS

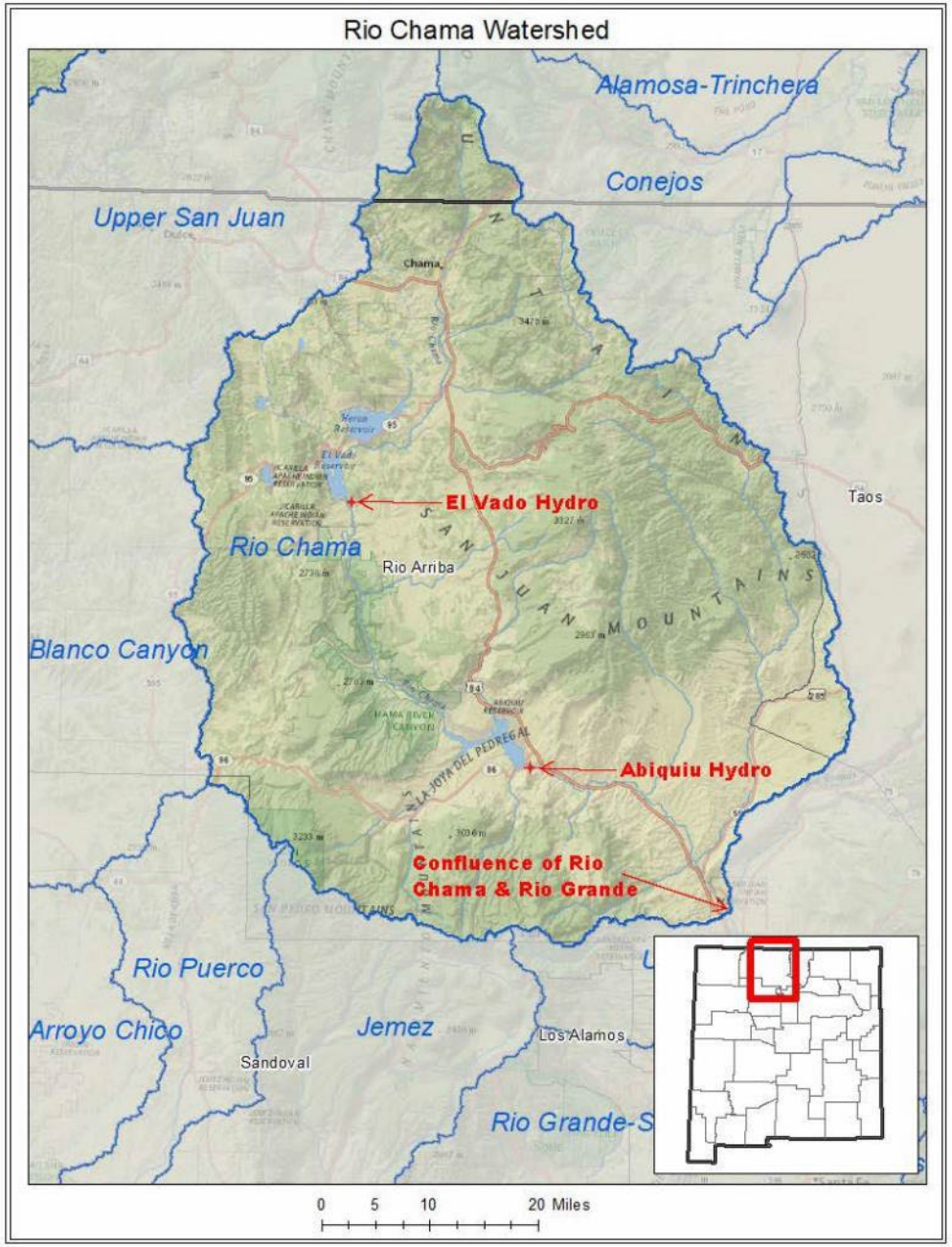
- Jordan Garcia (Deputy Manager – EP)
- James Alarid (Deputy Manager – Engineering)
- Clay Moseley (Engineering)
- Darryl Tabor (SCADA Coordinator)
- Adam Cooper (Hydro Manager)
- Matt Duggan (Hydro Tech)
- Don Wichers (Sr. Hydro Tech)

Hydroelectric Power Plants

- The Incorporated County of Los Alamos Department of Public Utilities (DPU) owns and operates two run-of-the-river hydroelectric power plants, both located on the Rio Chama in Rio Arriba County in northern New Mexico
- The El Vado hydroelectric plant is located approximately 14 miles southwest of Tierra Amarilla, NM on the El Vado Lake Dam, which is owned and operated by the U.S. Bureau of Reclamation
- The Abiquiu hydroelectric plant is located approximately 9 miles northwest of Abiquiu, NM on the Abiquiu Lake Dam, which is owned and operated by the U. S. Army Corps of Engineers

Rio Chama Basin

- The Rio Chama is an approximate 135-mile-long tributary to the larger Rio Grande.
- The Rio Chama Basin (i.e. “watershed”) is 3,157 square miles.
- The El Vado Watershed is very small at only 492 sq. mi.
- The Abiquiu Watershed is much larger at 2,146 sq. mi.
- The San Juan-Chama Project additionally diverts water across the Continental Divide into the Rio Chama System.



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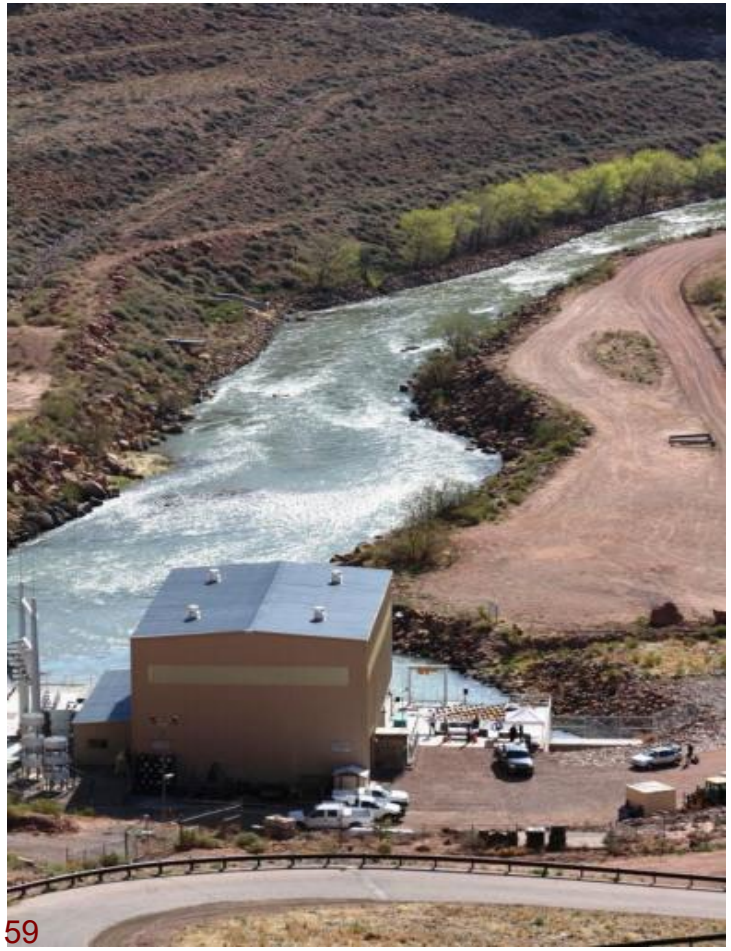
Los Alamos County Hydroelectric Generating Stations

Abiquiu – 3 Generating Units –
17 MW combined capacity



El Vado - 1 Generating Unit - 8.9 MW Capacity

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Hydroelectric Plants

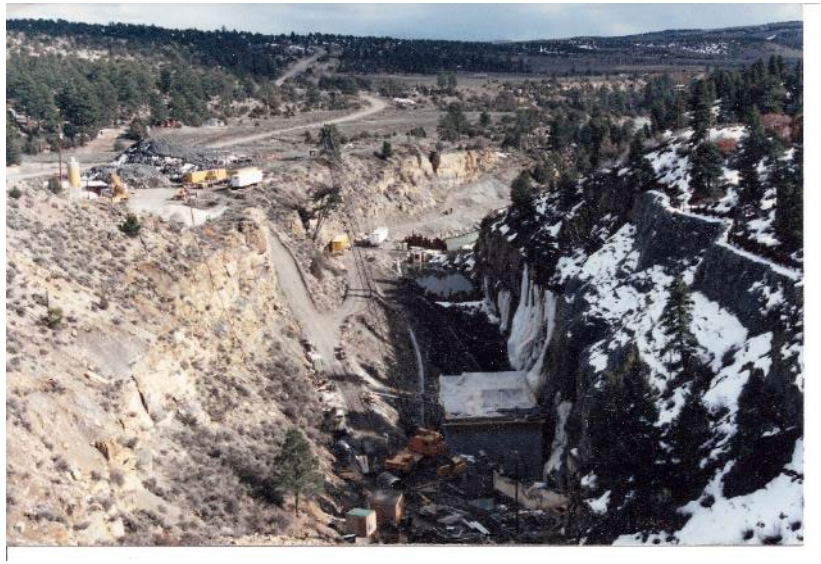
- Los Alamos County operates both plants under the provisions set forth in a Memorandum of Agreement with the dam operator for each plant.
- The Federal Energy Regulatory Commission (FERC) has jurisdiction over both power plants.

El Vado

- The El Vado hydroelectric plant was commissioned in 1987 and began generating in 1988 under FERC Permit No. 5226
- Characteristics of the El Vado hydroelectric plant are provided below

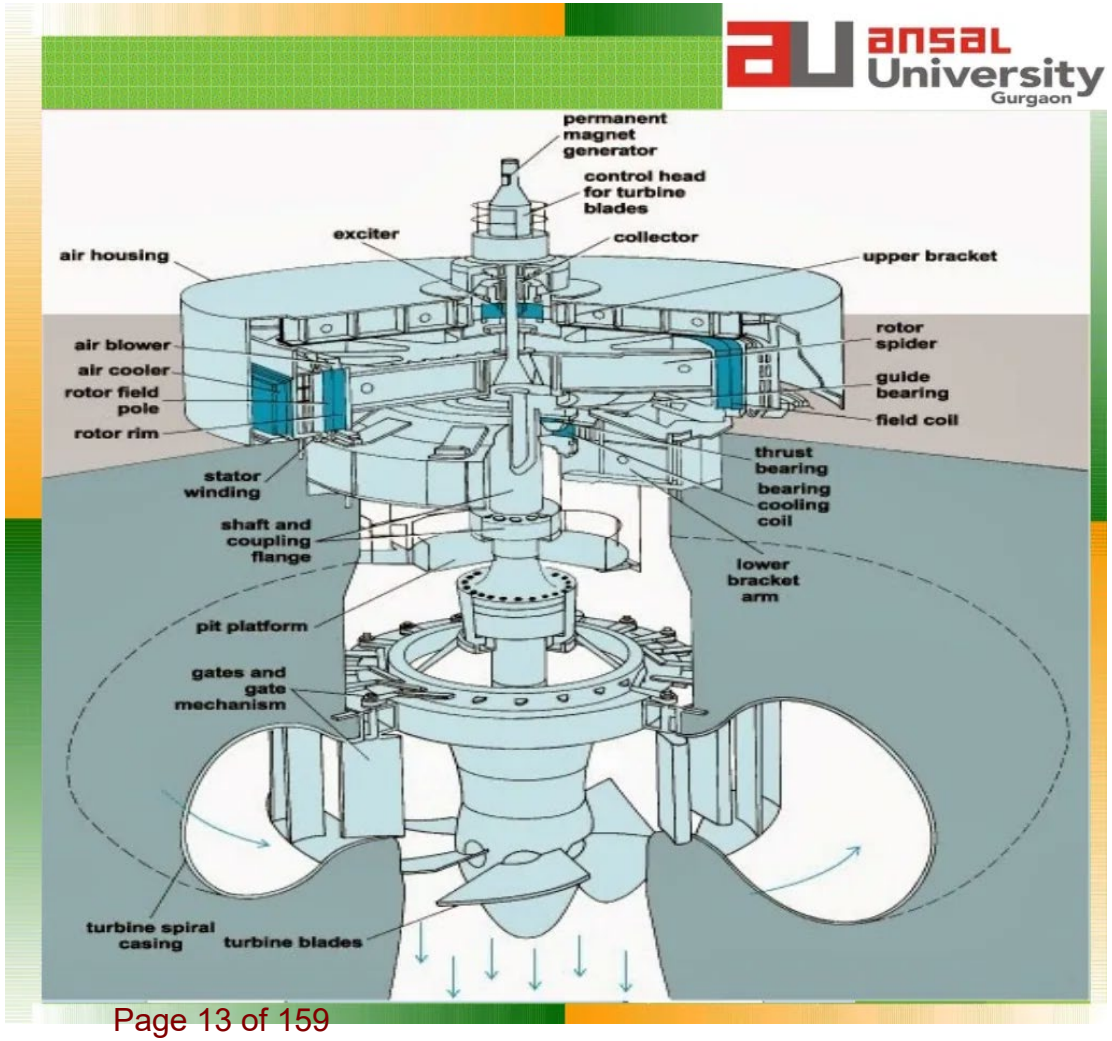
El Vado	Unit 1
Type	Vertical Kaplan
RPM	300
Rated Head	105 Feet
Flow Range	200-1000 CFS
Turbine	Voith (Germany)
Commissioned	1987
Generator	National Industri (Norway)
Rated Power	8.9 MW
Rated Voltage	4160 VAC

El Vado Construction



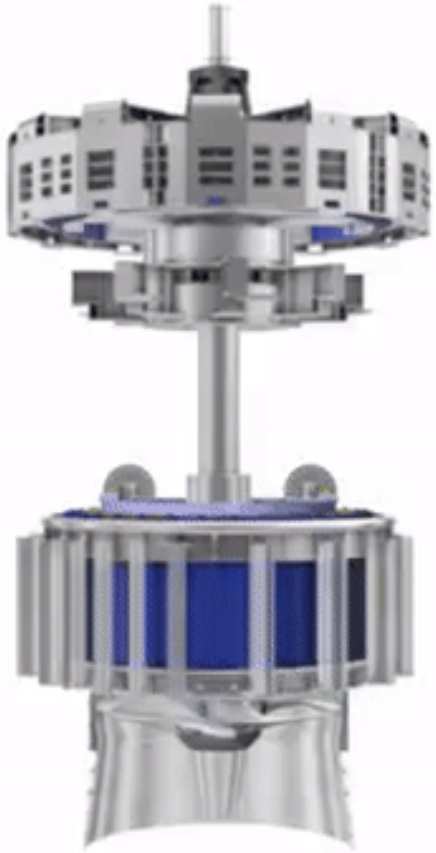
Kaplan Turbines

Typical Vertical Kaplan Unit



El Vado

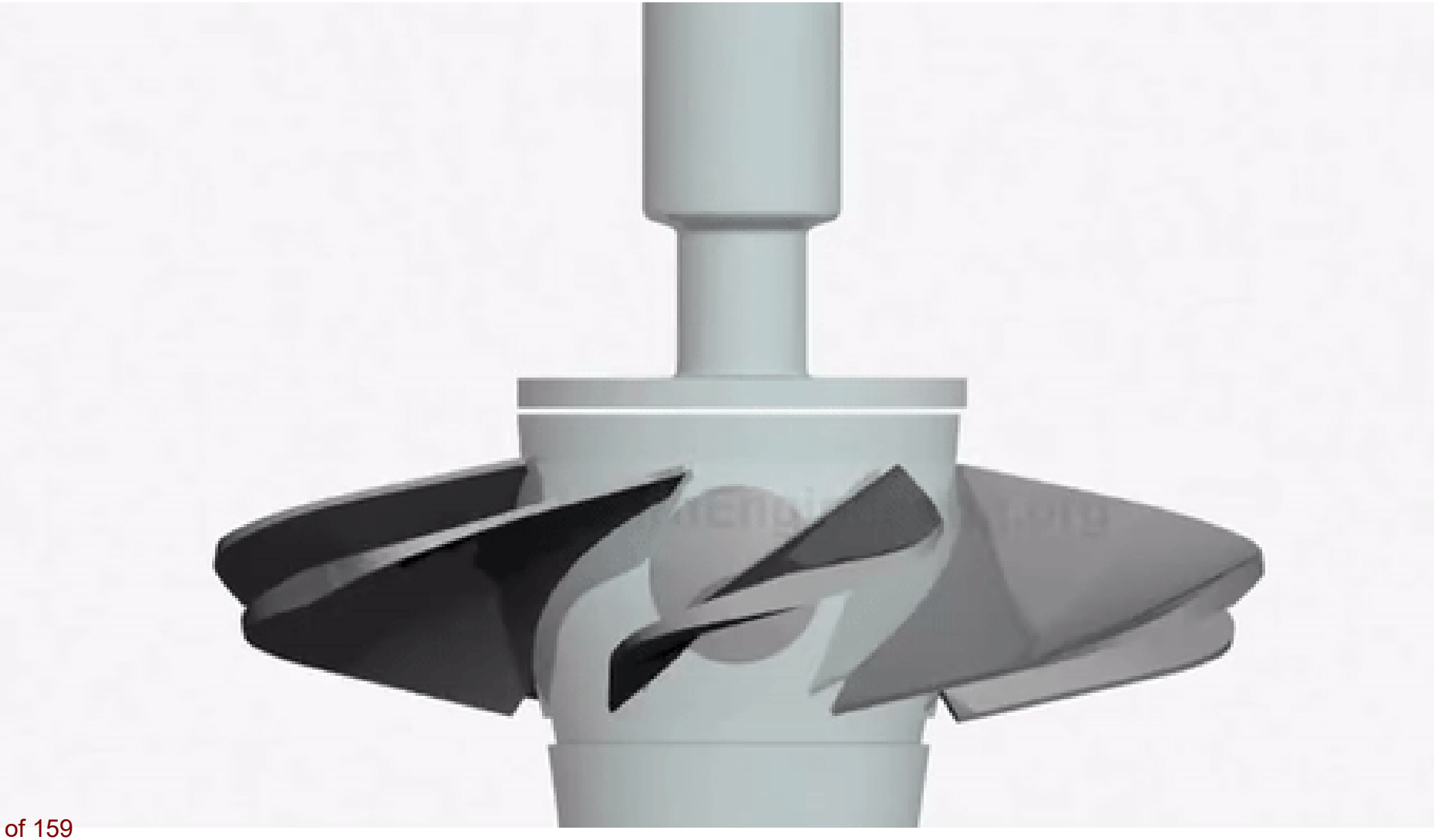
Kaplan Turbine Animation



VOITH

LOS ALAMOS

Kaplan Turbine Animation 2



Abiquiu

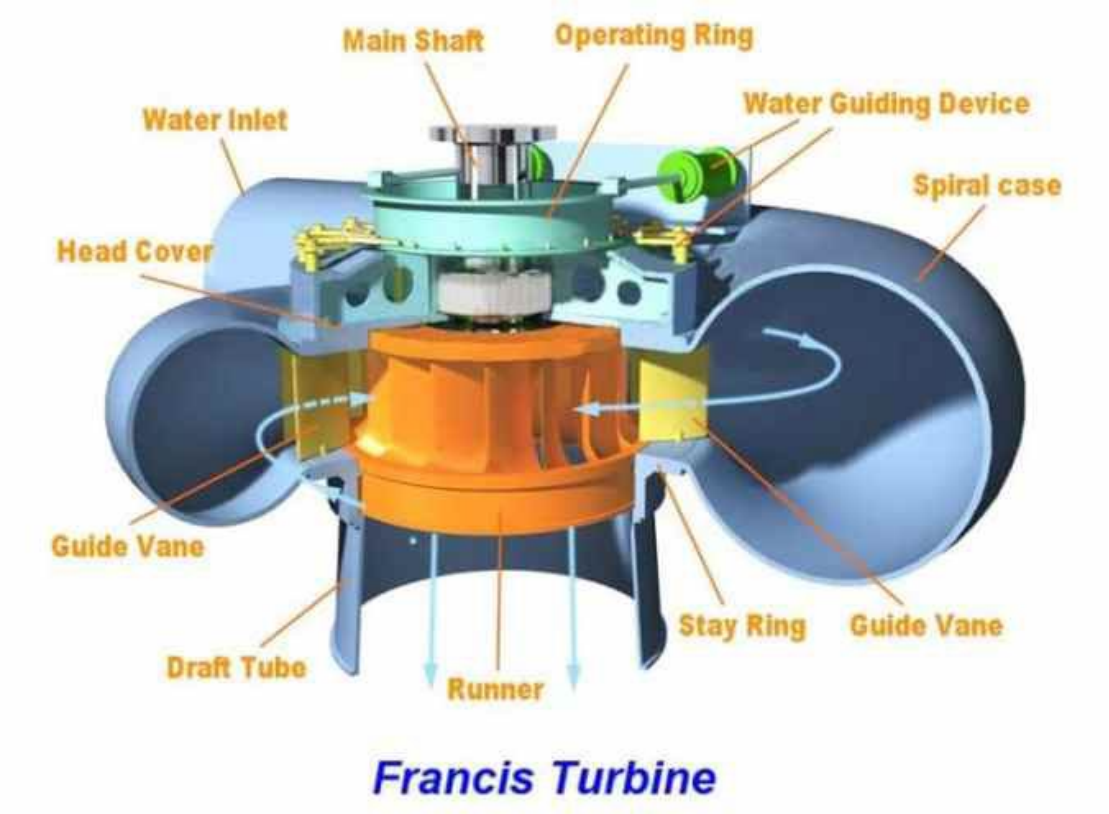
- The Abiquiu hydroelectric plant was commissioned in 1989 and began generating in 1990/91. A third low-flow unit was commissioned and brought online in 2011. The Abiquiu project is operated under FERC Permit No. 7396.
- Characteristics of the Abiquiu hydroelectric plant are provided below.

Abiquiu	Unit 1	Unit 2	Unit 3
Type	Vertical Francis	Vertical Francis	Horizontal Francis
RPM	400	400	514
Rated Head	175 Feet	175 Feet	170 Feet
Flow Range	235-550 CFS	235-550 CFS	75-235 CFS
Turbine	Harbin (China)	Harbin (China)	Andritz (Canada)
Commissioned	1989	1989	2011
Generator	Harbin (China)	Harbin (China)	Indar (Spain)
Rated Power	6.9 MW	6.9 MW	3.2 MW
Rated Voltage	4160 VAC	4160 VAC	4160 VAC

Abiquiu Construction

Francis Turbines

Typical Vertical Francis Unit



Abiquiu Units 1 & 2

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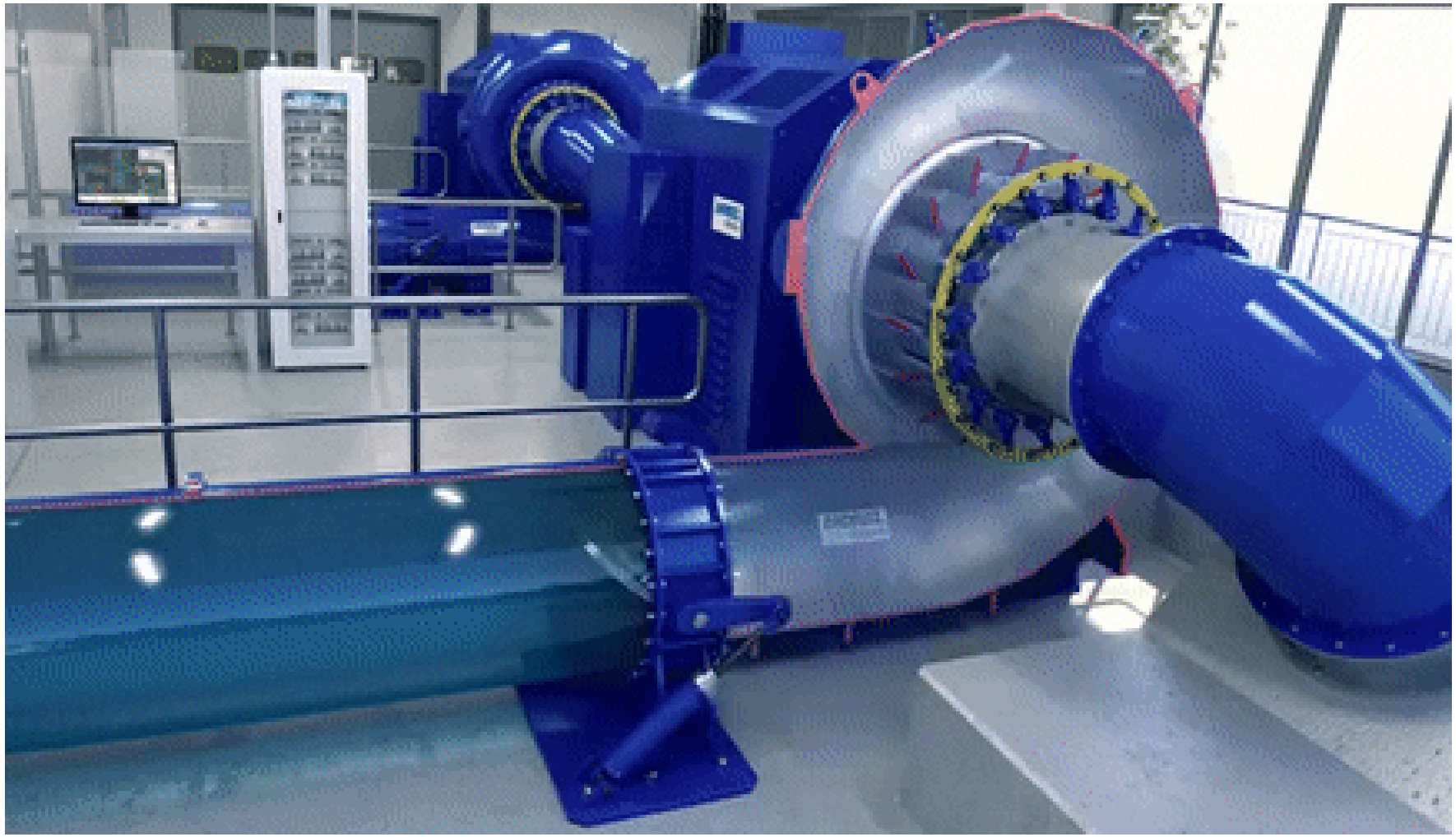
Francis Turbine Animation



Hydroelectric Plant Operations

- The two hydroelectric plants are staffed with three full time LAC - DPU employees. They all serve equally as both operators & maintainers.
- All three operators support both plants and work between the two plants as needed. The plants are normally staffed from 7:00 AM to 3:30 PM Monday – Friday, and one plant operator is on-call after hours and on weekends.
- The plants are monitored and operated after hours from the Los Alamos County Power Operations Center (POC) located in Los Alamos, NM. Remote operation and monitoring capabilities exist through a Supervisory Controls And Data Acquisition (SCADA) system.
- The SCADA system has been transferred to DOE-NNSA since the bulk of cybersecurity compliance by the North American Electric Reliability Corporation (NERC) applies to the transmission system which is owned and operated by DOE-NNSA.
- Los Alamos County has responsibility for maintenance and emergency response to the SCADA system for both hydroelectric facilities.

Hydroelectric Plant Asset Management

- The hydroelectric plant operations, maintenance, regulatory compliance, stakeholder coordination and planning are administered through an Asset Management Team (AMT) that consists of the department manager, plant operation staff, a SCADA coordinator and an Engineering Department representative.
- The team meets quarterly to plan, coordinate resources and assess the plants' operational and equipment needs to optimize plant efficiency, prioritize efforts and justify operational and capital budgets annually, including a 10-year capital plan.
- Asset management tools used to schedule and track efforts consists of HydroAMP for assessment of major plant components, MPRO 2000 PLUS software for scheduling & tracking maintenance of equipment, daily walkthrough checklists and facility-specific maintenance schedules.
- Hydropower Asset Management Partnership (HydroAMP) is a structured two-tiered, public domain(1), risk-based condition assessment and economic analysis tool developed and used by the US Bureau of Reclamation, US Army Corps of Engineers, Bonneville Power and Hydro Quebec. The DPU implemented HydroAMP for asset management of the El Vado and Abiquiu hydroelectric plants in 2008. The industry acceptance, systematic approach and database management component aligned well with the DPU's asset management goals.
  - ***NOTES:***

(1) HydroAMP has since been absorbed (hosted) by CEATI International, Inc., and is now subscription-based. The EP AMT is considering joining for the valuable guides and data contained therein.

El Vado Equipment Condition Index

El Vado – HydroAMP Condition Assessment					
Equipment	**Manufacturer**	**Placed In Service**	**Condition Index (2008)**	**Condition Index (2012)**	**Condition Index (Today)**
PLANT					
Main Station Batteries	C&D	2017 Replaced	10.0 / GOOD	-	10.0 / GOOD
Compressed Air System - High Pressure Governor Air	Baur	1987	9.9 / GOOD	-	-
Compressed Air System – Low Pressure Station Service	Champion	1987	9.9 / GOOD	-	-
Crane - 60 Ton Overhead Crane	Gaffey	1998 Bridge 2015 Hoist	10.0 / GOOD	-	10.0 / GOOD
Crane - 5 Ton Jib Crane	Yale	1987	9.67 / GOOD	-	-
Main Transformer	Westinghouse	1987	10.0 / GOOD	6.57 / FAIR	6.57 / FAIR
UNIT					
Main Circuit Breaker (Air)	Siemens	2014 Replaced	10.0 / GOOD	-	10.0 / GOOD
Emergency Closure Valve - TSV Butterfly Valve	Kabota	1987	9.2 / GOOD	-	-
Emergency Closure Valve - PSV Butterfly Valve	Litostroj (Yugoslavia)	1985	8.2 / GOOD	-	-
Emergency Closure Valve - Draft Tube Gates		1987	9.2 / GOOD	-	-
Excitation System	Basler	2007 Digital Upgrade	10.0 / GOOD	-	-
Generator Rotor ***(Note 1)***	National Industri	2015 Cleaned & Tested	Incomplete	4.32 / FAIR (POOR)	10.0 / GOOD
Generator Stator ***(Note 1)***	National Industri	2015 Rewound	Incomplete	7.24 / GOOD (FAIR)	10.0 / GOOD
Governor	Voith	2008 Digital Upgrade	10.0 / GOOD	-	-
Turbine	Voith	2015 Refurbished	8.3 / GOOD	9.42 / GOOD	10.0 / GOOD

Condition Index (CI) LEGEND:
7 <= CI <= 10: GOOD
3 <= CI < 7: FAIR
0 <= CI < 3: POOR

Note (2012 K-P Assessment): Although the HydroAMP Condition index indicates that the rotor and stator are in fair to good condition, the extent of the oil/brush dust residue throughout the interior of the generator, and the possible adverse consequences from it, would actually indicate a "poor to fair" condition.
Note (Generator Rotor Assessment): The generator rotor condition changed from "poor/fair" in 2012 to "good" today as a result of the generator rewind project completed in 2017.
Note (Main Transformer Assessment): While the overall assessment is "fair", CO measurement is very high indicating insulation overheating.

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El Vado Main Station Transformer – Needs Replacement

Abiquiu Equipment Condition Index

Abiquiu – HydroAMP Condition Assessment					
Equipment	**Manufacturer**	**Placed In Service**	**Condition Index (2008)**	**Condition Index (2012)**	**Condition Index (Today)**
PLANT					
Main Station Batteries	C&D	2017 Replaced	10.0 / GOOD	-	10.0 / GOOD
Compressed Air System - Low Pressure Station Air	Gardner Denver	1989	9.9 / GOOD	-	-
Crane - 60 Ton Overhead	Gaffey	1997	10.0 / GOOD	-	-
Emergency Closure Gate - PRV Bypass Cone Valve #1	Kabota	1989	Pending	-	-
Emergency Closure Gate - PRV Bypass Cone Valve #2	Kabota	1989	Pending	-	-
Emergency Closure Gate - Penstock Tunnel Gate	ZWAG	1989	9.0 / GOOD	-	-
Main Transformer	ASEA Electric	1989	Incomplete	9.91 / GOOD	-
UNIT #1					
Main Circuit Breaker (Air) Unit #1	Siemens	2014 Replaced	7.37 / GOOD	-	10.0 / GOOD
Emergency Closure Valve - TSV Butterfly Valve - Unit #1	Harbin Equipment Package	1989	8.2 / GOOD	-	-
Emergency Closure Gate - Draft Tube Gate Unit #1	Telluride Iron Works	1989	8.5 / GOOD	-	-
Excitation System Unit #1	Basler	2005 Digital Upgrade	10.0 / GOOD	-	-
Generator Rotor Unit #1	Harbin	1989	Incomplete	9.02 / GOOD	-
Generator Stator Unit #1	Harbin	1989	Incomplete	8.42 / GOOD	-
Governor Unit #1	HPS	2003 Digital Upgrade	10.0 / GOOD	-	-
Turbine Unit #1	Harbin	1989	7.8 / FAIR	4.75 / FAIR	4.75 / FAIR
UNIT #2					
Circuit Breaker (Air) Unit #2	Siemens	2014 Replaced	7.37 / GOOD	-	10.0 / GOOD
Emergency Closure Valve - TSV Butterfly Valve - Unit #2	Harbin Equipment Package	1989	8.2 / GOOD	-	-
Emergency Closure Gate - Draft Tube Gate Unit #2	Telluride Iron Works	1989	8.5 / GOOD	-	-
Excitation System Unit #2	Basler	2005 Digital Upgrade	10.0 / GOOD	-	-
Generator Rotor Unit #2	Harbin	1989	Incomplete	9.02 / GOOD	-
Generator Stator Unit #2	Harbin	1989	Incomplete	8.42 / GOOD	-
Governor Unit #2	HPS	2003 Digital Upgrade	10.0 / GOOD	-	-
Turbine Unit #2	Harbin	1989	8.8 / GOOD	8.75 / GOOD	-

Condition Index (CI) LEGEND:
7 <= CI <= 10: GOOD

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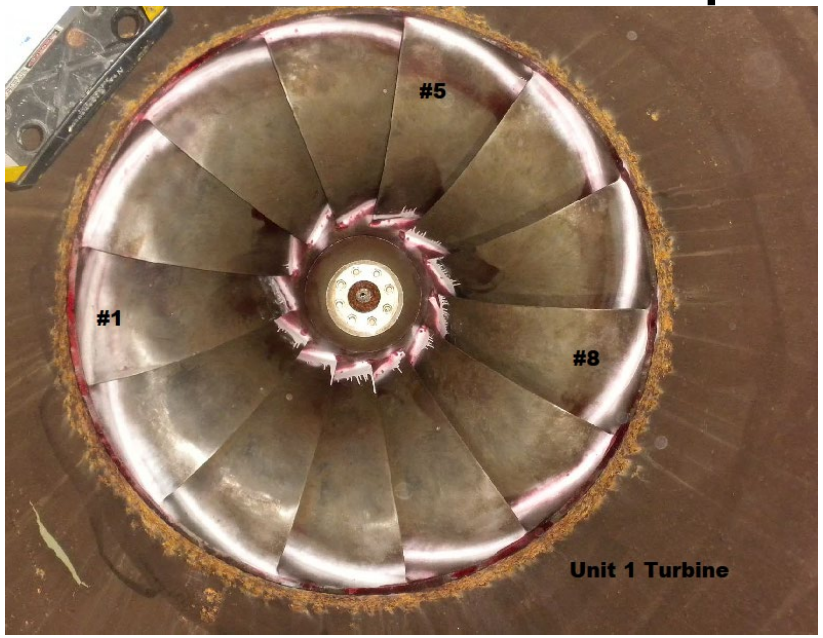
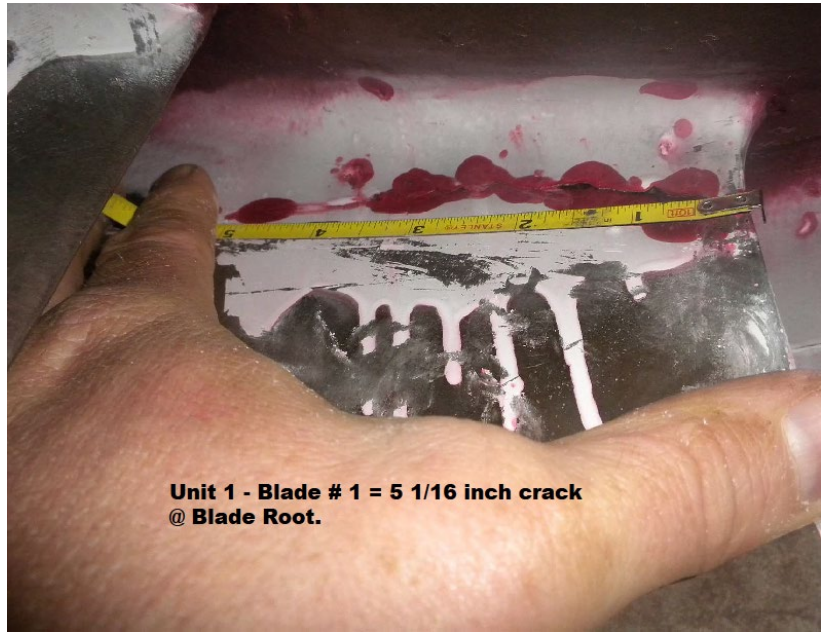
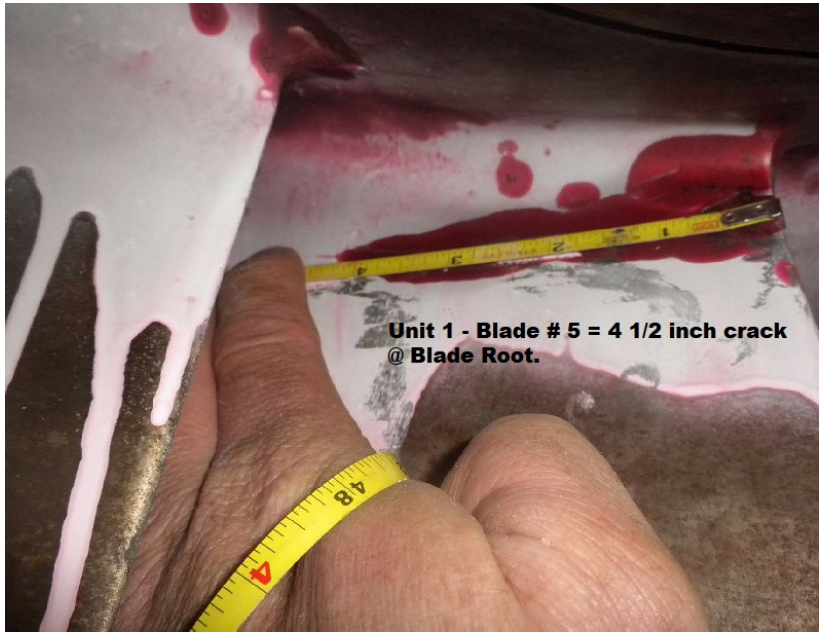
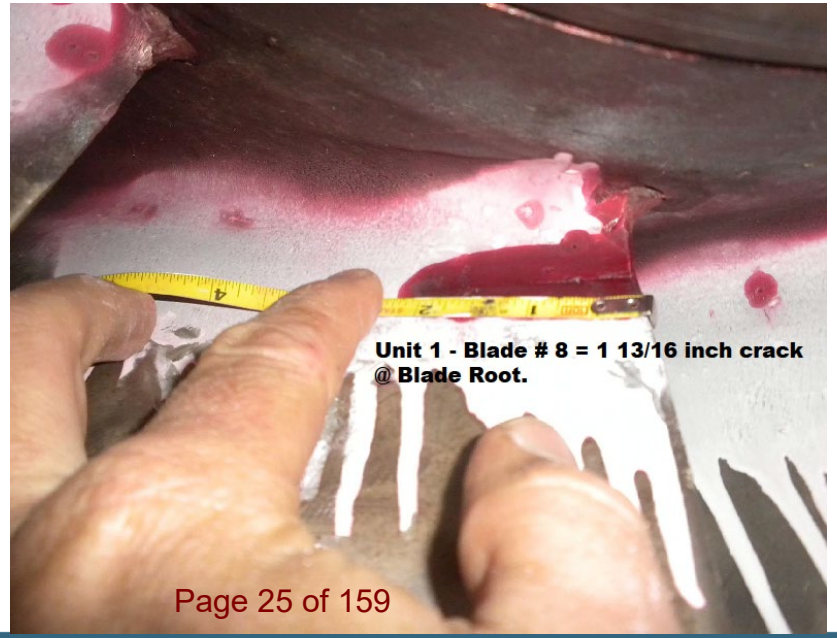
Abiquiu Unit 1 Turbine Blades Cracks









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Maintenance, Testing and Capital Projects

- The DPU has completed several major maintenance, testing and capital improvements over the years as either planned reliability improvements or due to equipment failure.
- Consideration of these improvements in assessing the condition of each plant, plant reliability and economic planning of future budgets is critical.
- The table below summarizes the major maintenance and capital improvements that have taken place at the Abiquiu Plant and the El Vado Plant.

Past 10-Year CIP & O&M

Facility	Year	Cost	Description
Abiquiu	2012		New Plant Main Control Battery(ies) Chargers
Abiquiu	2012		Rebuild Unit #1 Wicket Gate Hydraulic Cylinder (1 of 2)
Abiquiu	2013		Rebuild Unit #1 Wicket Gate Hydraulic Cylinder (2 of 2)
Abiquiu	2013	$15,252.00	Clean & Dispose of Plant Sumps' Sludge
Both	2013	$55,220.00	CO2 Fire Protection Systems Evaluations
Both	2013	$163,935.00	Hydro Power Plant(s) Condition Assessment(s)
Abiquiu	2014	$20,562.00	Replace/Upgrade Plant RTU (SCADA)
El Vado	2014	$20,562.00	Replace/Upgrade Plant RTU (SCADA)
Abiquiu	2015	$194,077.00	Upgrade Mechanical Relays With Solid State Devices
El Vado	2015	$192,949.00	60 Ton Hoist for Existing Bridge Crane
El Vado	2015	$194,077.00	Upgrade Mechanical Relays With Solid State Devices
Both	2015	$89,157.00	River Gauging Stations VHF Radio Telemetry Upgrades
El Vado	2015	$8,989.00	Road Widening and Stabilization for Unit Transport/Refurbishment
Abiquiu	2017	$65,625.00	New 125 kW Propane Emergency Back-up Generator
El Vado	2017	$65,625.00	New 80 kW Diesel Emergency Back-up Generator
El Vado	2017	$4,587,174.00	Main Generator Rewind & Turbine Refurbishment Project
Abiquiu	2018	$336,979.00	Plant PLC & Digital Controls Upgrade
Abiquiu	2018	$36,299.00	Main Plant Control Batteries Replacement
Abiquiu	2018	$450,316.00	Main Dam Penstock Vent Shafts - Shutoff Valves Installation
El Vado	2018	$36,299.00	Main Plant Control Batteries Replacement
Both	2018	$31,519.00	POC SCADA Room Uninterruptable Power Supply (SCADA)
Both	2018	$31,964.00	POC SCADA Room HVAC Replacement (SCADA)
Abiquiu	2020	$107,757.00	PRV Chamber Gates 3-Ton Jib Crane Installation
El Vado	2021	$31,000.00	12 Miles 69kV Transmission Line Pole Inspections
El Vado	2021	$432,587.00	Purchase New Main Station Transformer
Both	2021	$369,541.00	Paint Hydro Decks, Floors, Railings, Cranes, Hatches etc.
Both	2021	$8,419.00	Dispose of Abandoned CO2 Bottles

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Current 10-Year CIP

Facility	Year	Cost (1)	Description
Abiquiu	2022	$100,000	Main Station Transformer Replacement - Drafting RFP - Target Advertise Aug 2022
El Vado	2022	$375,000	Install 12 Miles of New Fiber Optic Line from El Vado to Spills Sub - Target Advertise Aug 2022
Both	2022	$90,000	Hydro Yards Perimeter Security Fencing Upgrades - Target SPA Award Aug 2022
Both	2022	$250,000	SCADA Hardware/Software Upgrades - Target Design-Build Award Sep 2022
El Vado	2022	$85,000	Replace 1,000 gal. Diesel UST and Piping (REGULATORY) - Target Award Oct 2022
Abiquiu	2022	$150,000	Construct New Office Building (SAFETY) - Target Award Oct 2022
El Vado	2022	$150,000	Main Station Transformer Replacement - Awaiting Build 26-28 Weeks - Target Advertise Nov 2022
Abiquiu	2023	$60,000	New Concrete Slab in Loading Area - Target Award Feb 2023
Abiquiu	2023	$300,000	USACE Main Penstock Tunnel Liner Repair
Abiquiu	2023	$400,000	Unit #1 Runner Repair or Replacement (TENTATIVE)
El Vado	2023	$90,000	Install Ultrasonic Flow Meter
El Vado	2024	$440,000	Plant PLC & Digital Controls Upgrade
Abiquiu	2024	$1,500,000	Main Dam Penstock Vent Shafts Repairs
Abiquiu	2026	$250,000	Rewind study (Condition Assessment)
NOTES:	(1)	The majority of these items were budgeted Pre-COVID. Many of these figures will go over existing budget figures.	

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USBR & USACE Projects

- USBR has just begun a 5-year project to perform extensive repairs on El Vado Dam 2022–2026.
  - LAC will see lost revenues and shared costs.
- USACE has identified repair projects to their existing steel penstock liner and air vent shafts.
  - USACE is performing ongoing inspections in preparation for engineered solutions.
  - LAC will see lost revenues and shared costs.

El Vado Dam Repairs

USBR has successfully begun significant repairs to El Vado Dam under their federal Safety of Dams (SOD) Program.

- The program appropriates Congessional funding for repairing Dams flagged as unsafe.

The 1935 Dam has settled significantly, warping the steel membrane and inducing additional seepage pathways around, under and through the Dam.

2 Phase Project:

- Phase 1 (2022–2023): Drain Lake to minimum pool (15 feet deep at Dam). Grout behind existing steel membrane & affix new geomembrane liner on top of steel membrane. New Cathodic Protection. Extensive Sub-terranian Grout Curtain.
  - El Vado Hydro cannot generate during this 2-year period – lake levels below minimum operating head.
- Phase 2 (2024-2026): Lake Level Restriction raised to 1/3 capacity. Remove existing steel spillway, road & bridge and spillway gate. Lower Dam by 4 feet. Construct new concrete spillway, new radial gate, rebuild road and bridge, straighten road, add concrete wave deflectors to regain original capacity.
  - Water operations will go back to normal (with the caveat of the lower head restriction), and El Vado Hydro can handle all water releases as before. Vehicular access across the road on NM112 will be unavailable for 3 years.

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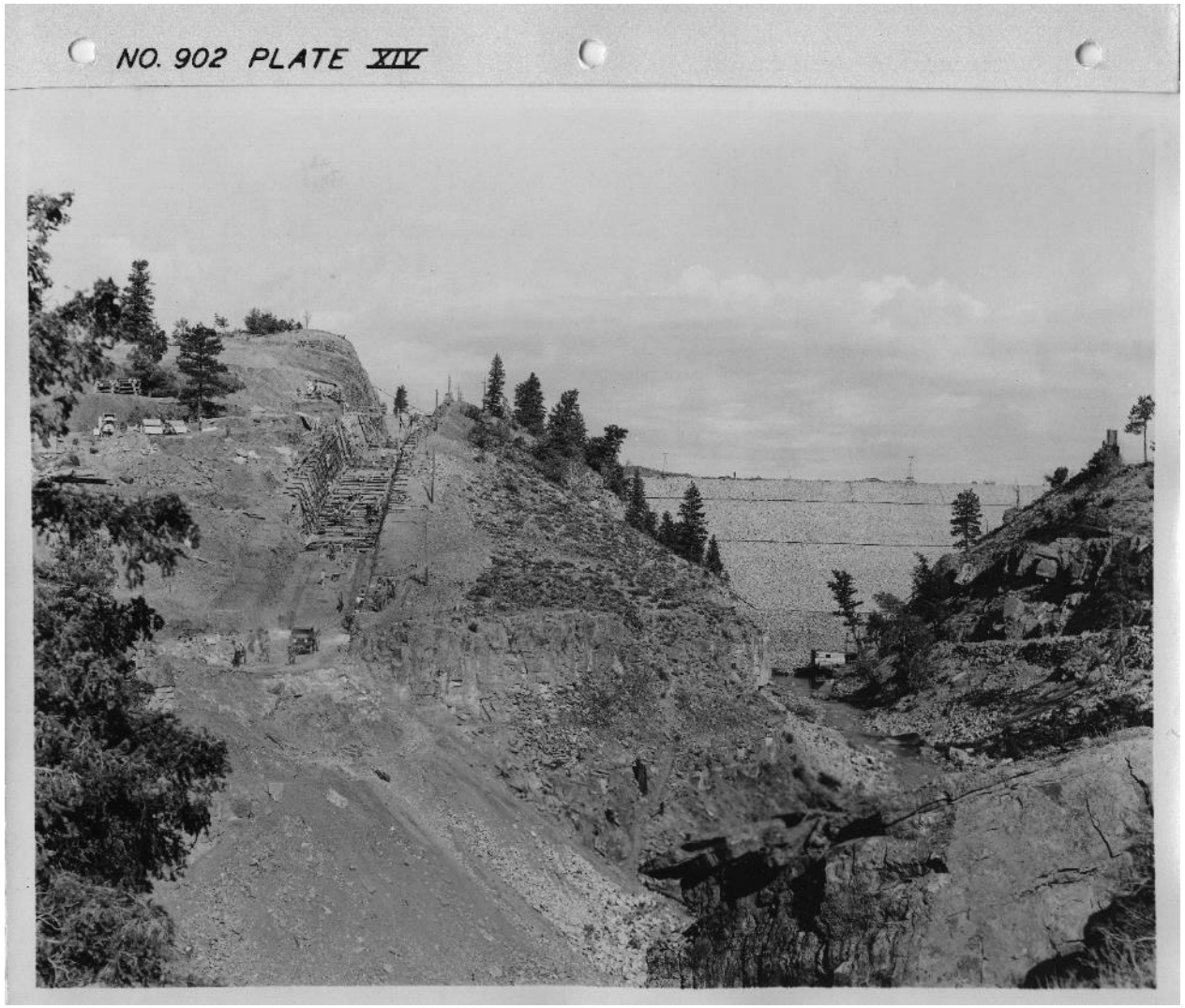
El Vado Dam & Spillway Construction 1933-35



LOS ALAMOS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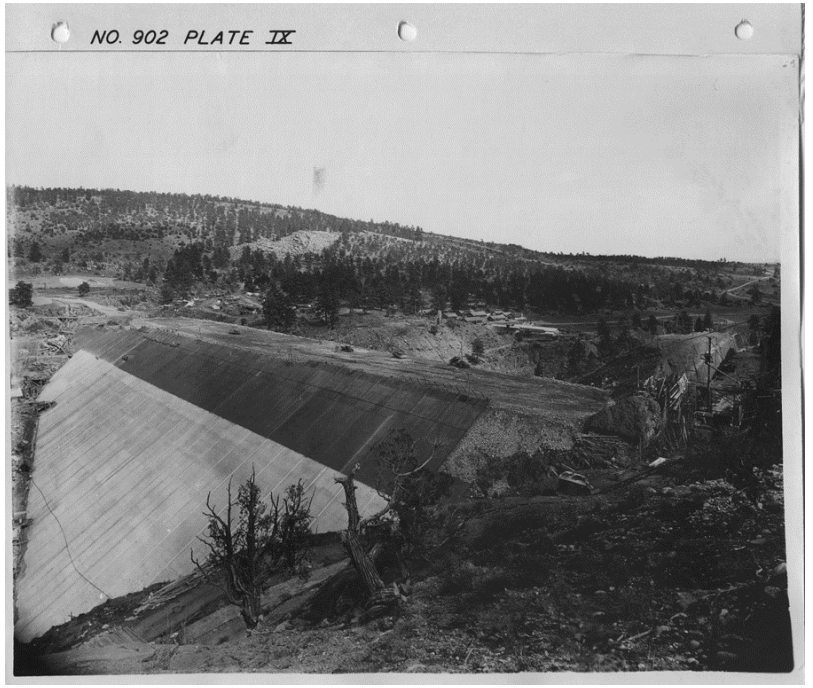
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NO. 902 PLATE XIX


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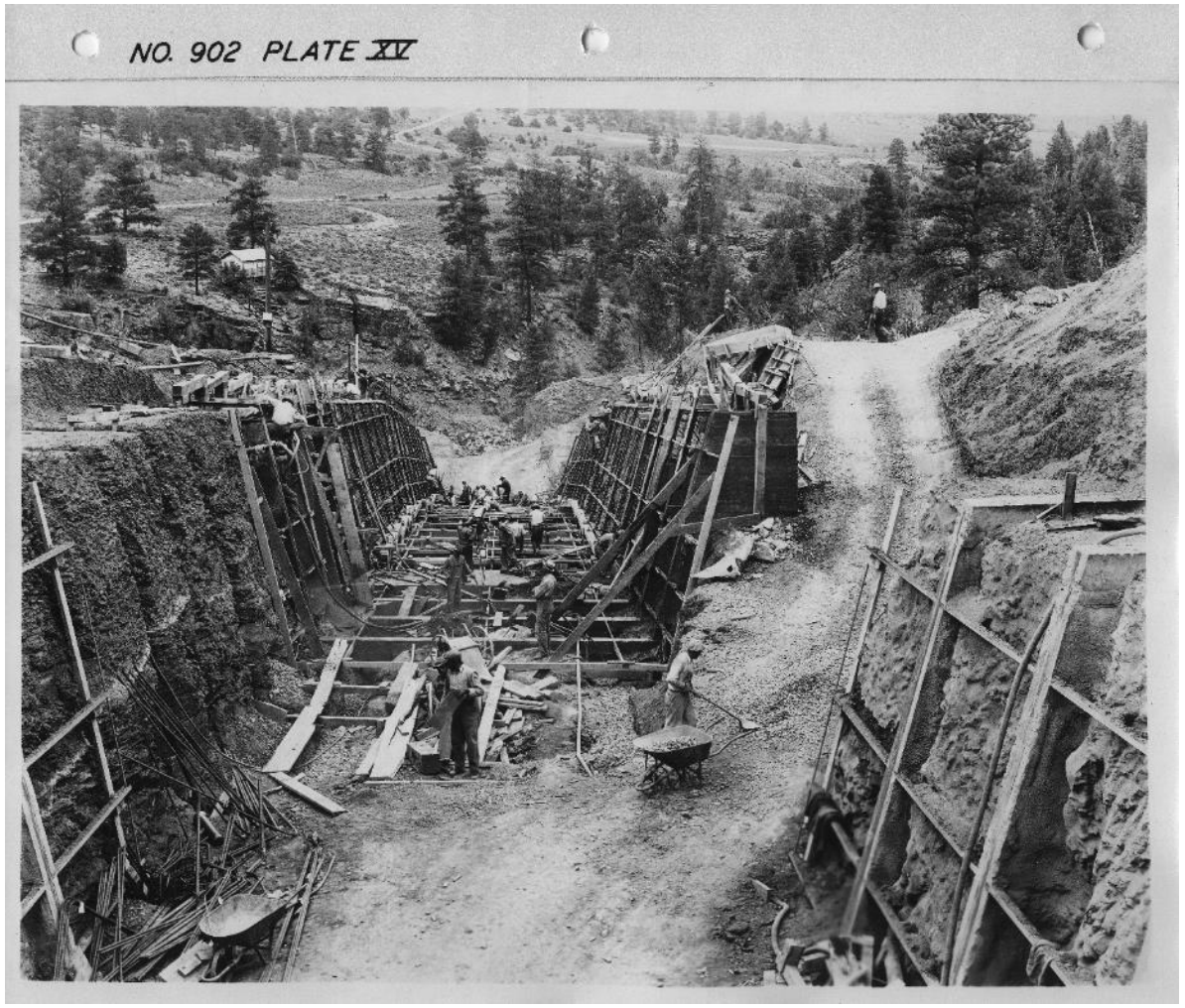
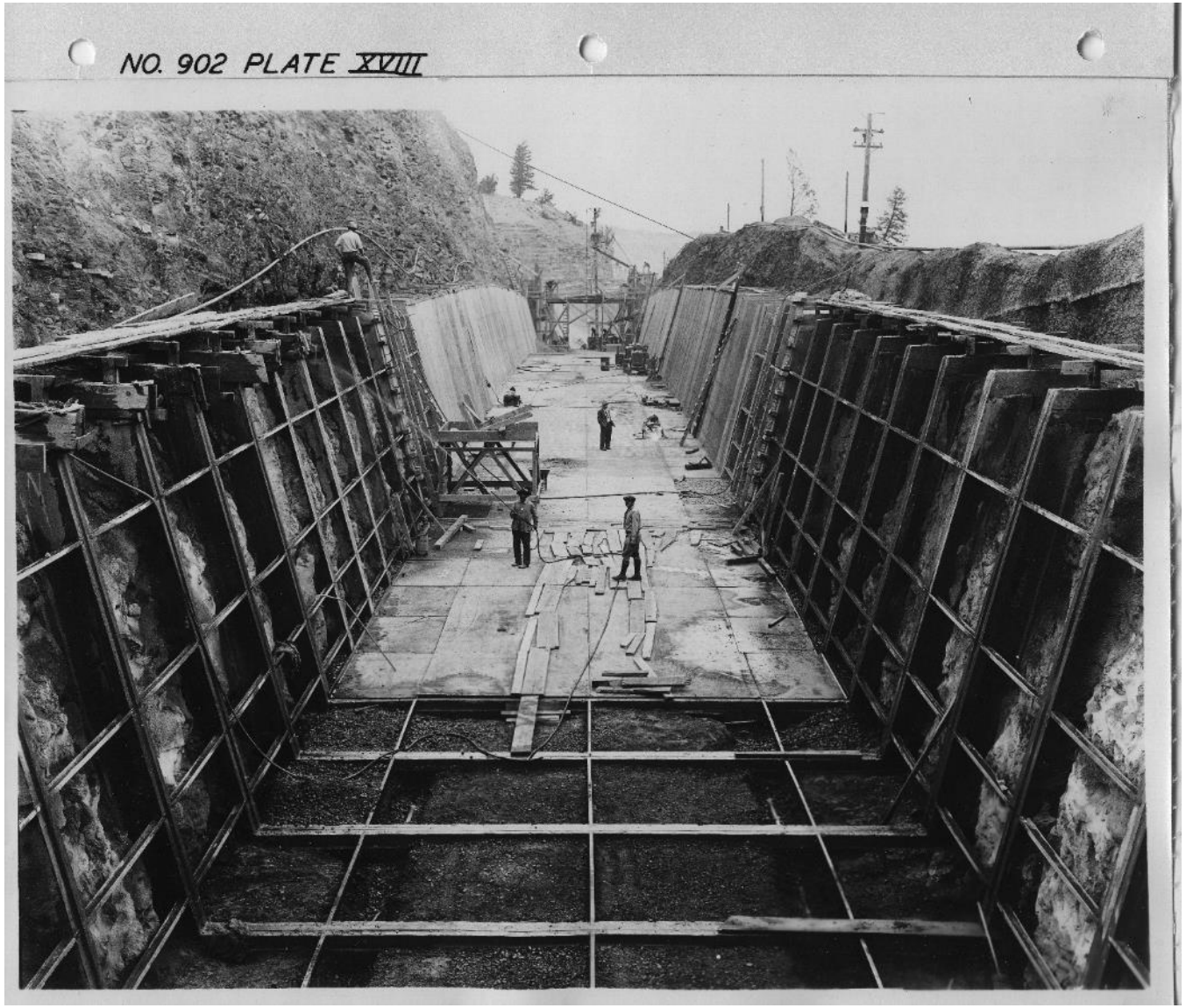
NO. 902 PLATE XXII


NO. 902 PLATE XV


NO. 902 PLATE XVIII

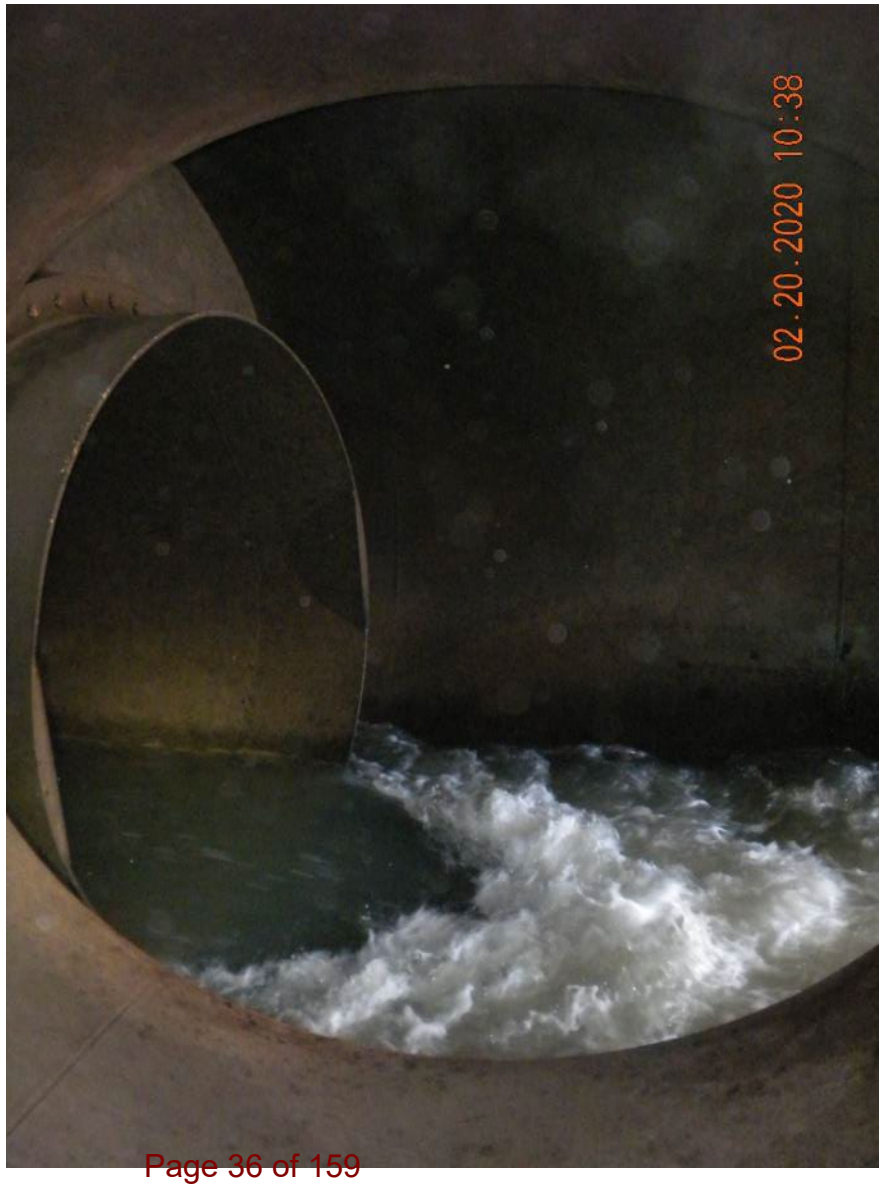
Abiquiu Tunnel Liner

- USACE Main Discharge Gates & Penstock Tunnel from lake to river is in need of repair.
- USACE has put LAC on notice that we will incur a portion of the cost.
- Project currently budgeted for 2022/2023
- LAC share is estimated at $300k
- DPU will include in FY2023 Budget request
- Outage Duration currently unknown

USACE Regulating Gates

LOS ALAMOS

USACE Penstock Outlet Works



USACE Tunnel Corrosion

LOS ALAMOS

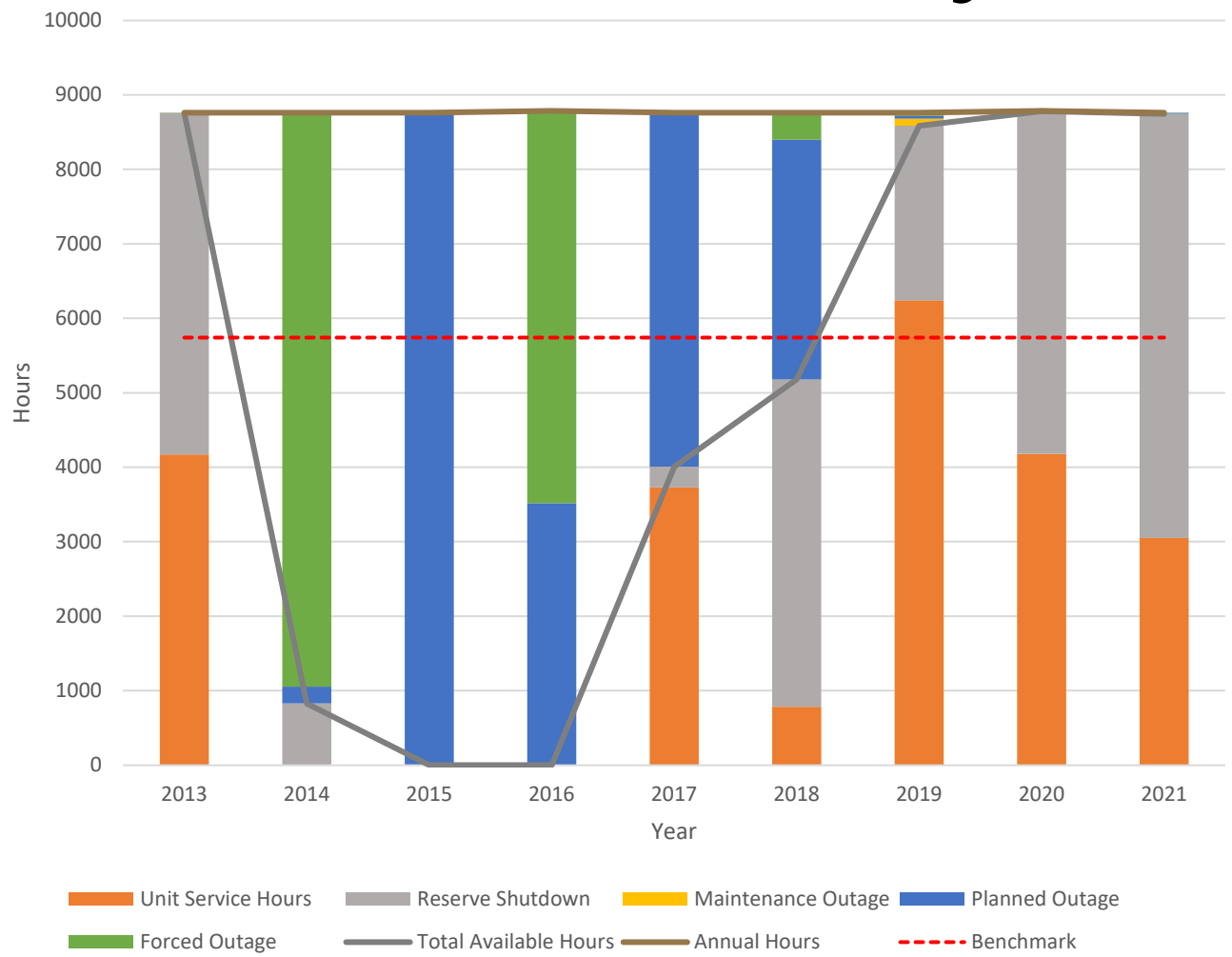
Abiquiu Vent Shaft Repairs

- USACE has also identified corrosion in the air vent shafts on the main penstock.
- USACE has put LAC on notice that we will incur a portion of the cost to repair.
- Vent Shaft replacement currently estimated at $3 million. Lower cost alternatives being considered.
- USACE looking at Current Administrations Infrastructure Bill for potential cost sharing.
- LAC portion of repairs currently unknown. Plan to negotiate.
- Outage Duration currently unknown

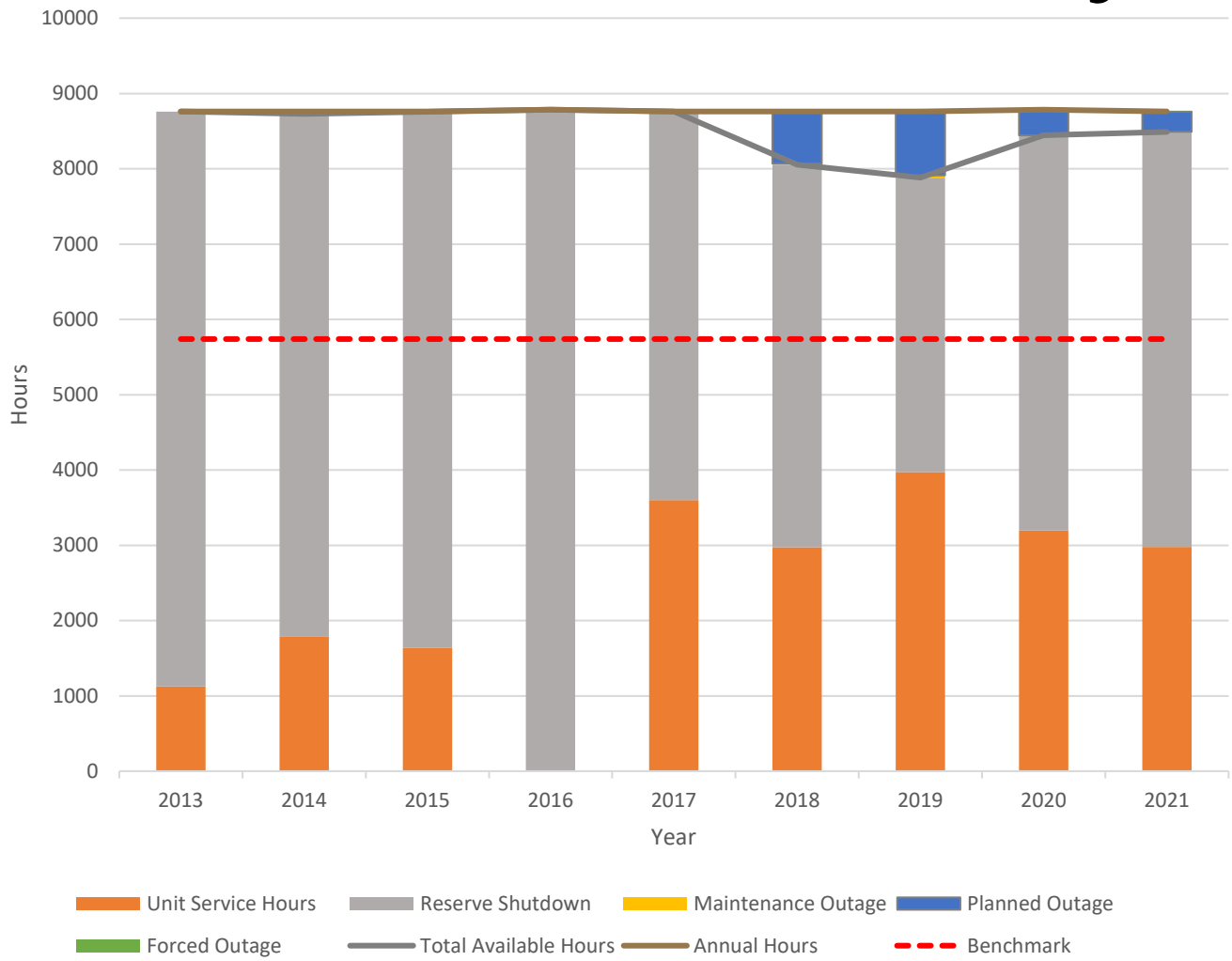
USACE Vent Shafts Exterior Corrosion

LOS ALAMOS

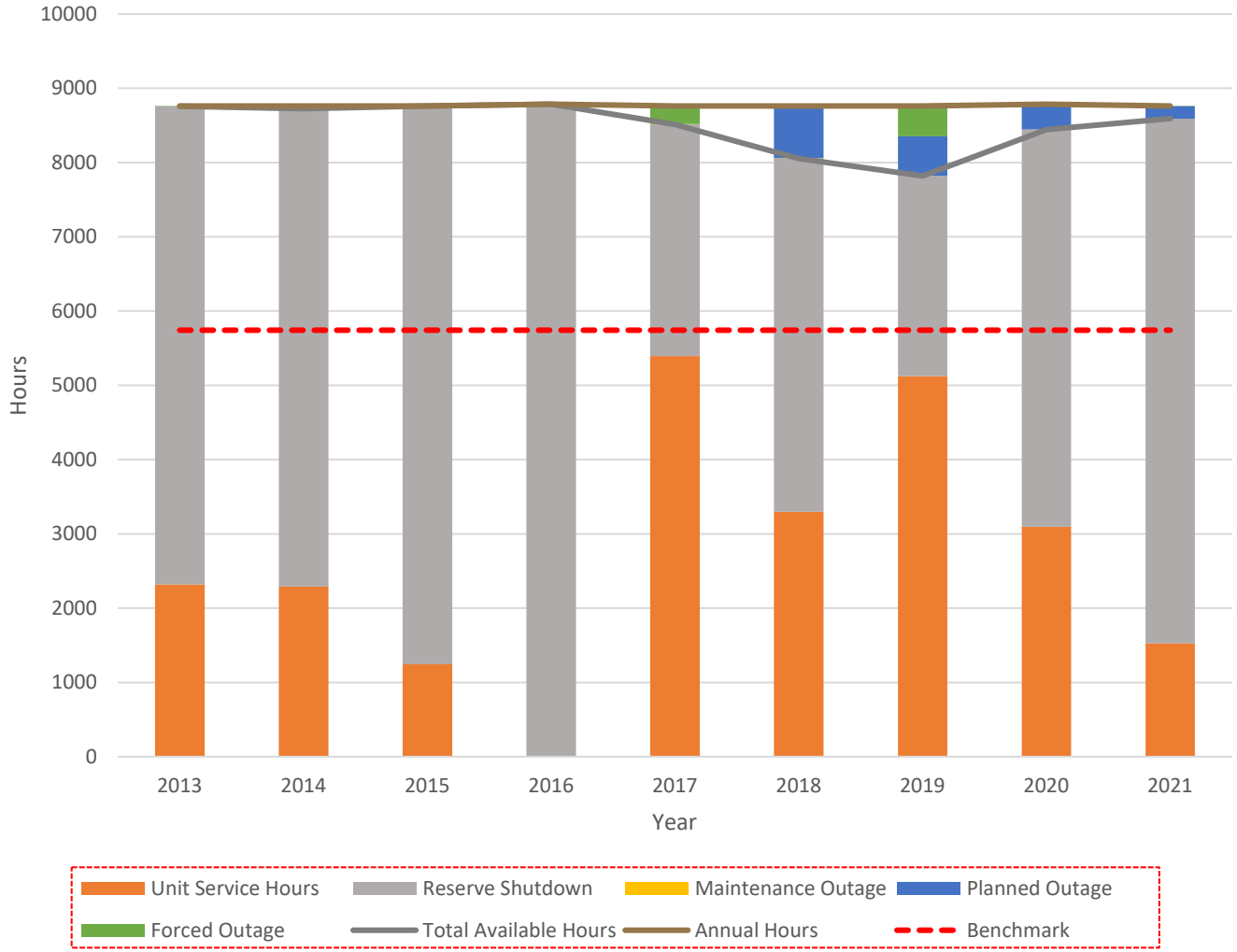
Performance Metrics
El Vado Availability Factor



Performance Metrics
Abiquiu Unit 1 Availability Factor

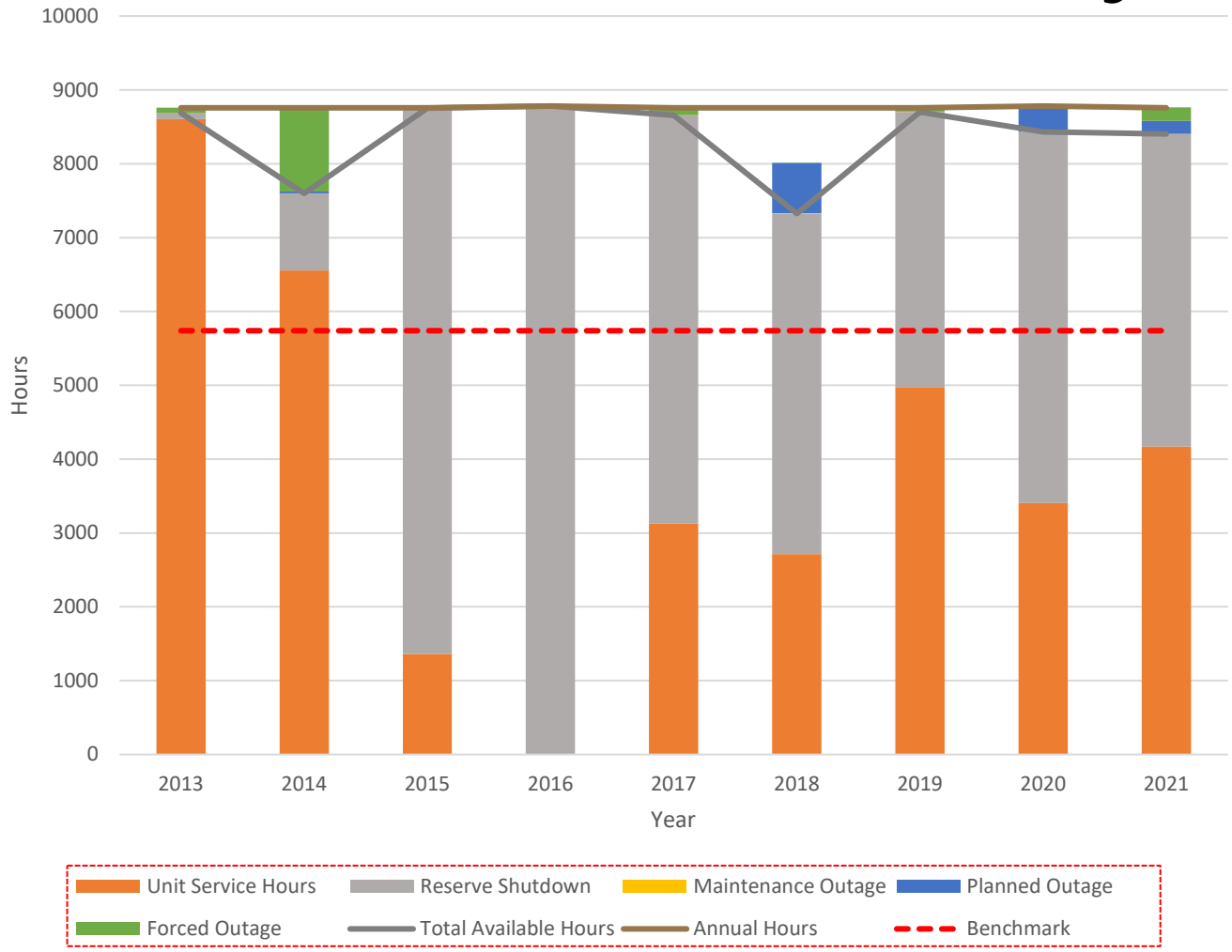


Performance Metrics
Abiquiu Unit 2 Availability Factor



LOS ALAMOS

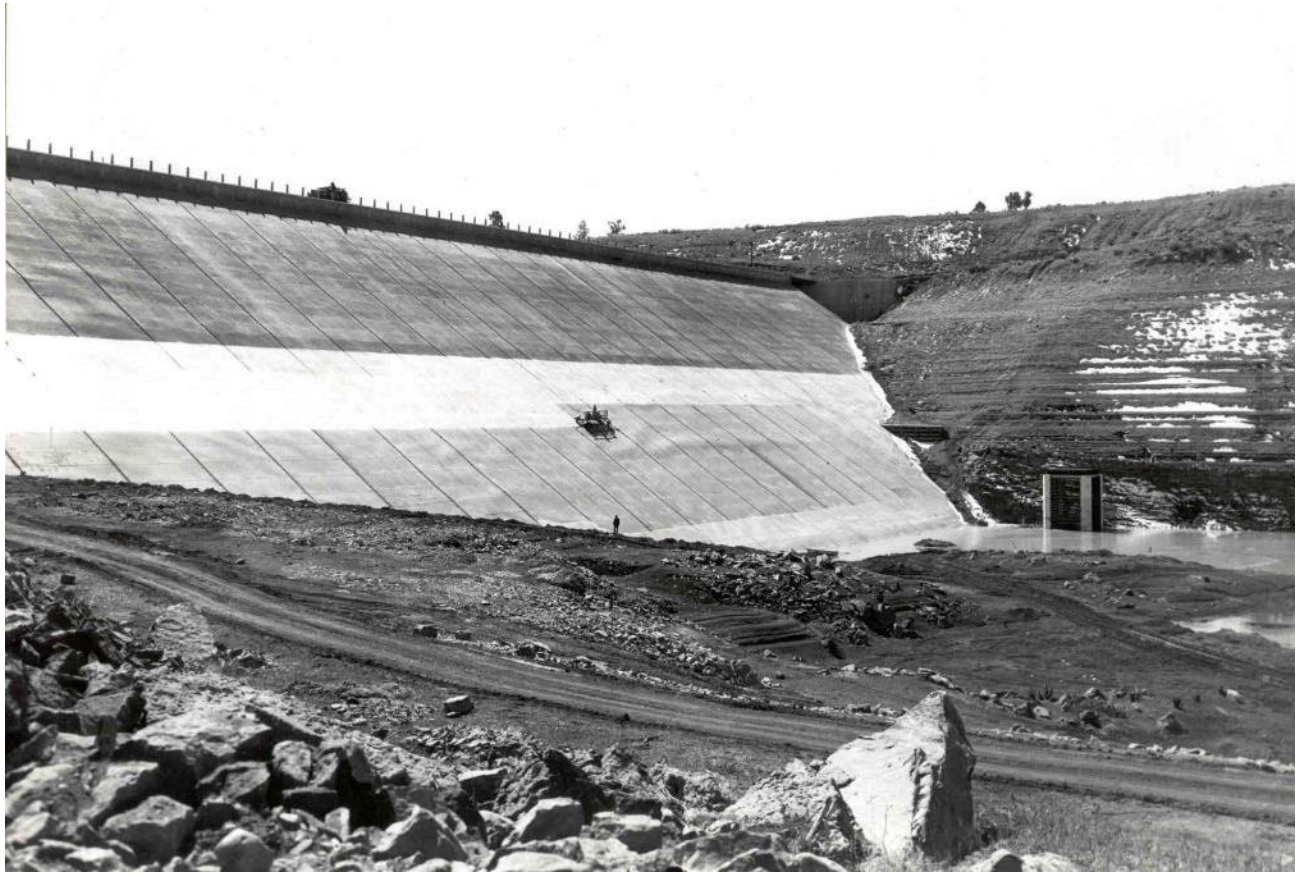
Performance Metrics
Abiquiu Unit 3 Availability Factor



Future Hydro Concerns – Sediment & Debris

- It is widely agreed upon that both El Vado and Abiquiu Dams are experiencing sedimentation issues at their intake structures.
- El Vado Hydro's intake utilizes the original 1935 outlet tunnel. The intake structure was modified in 1953 and again during plant construction in the late 1980's to address sedimentation.
- Abiquiu Hydro's Intake is common to the only penstock associated with the dam from the 1960's. Its horizontal orientation has always been prone to passing sediment.
- Both power plants have been passing sediment from the lake into the river channels for years.
- Abiquiu Hydro is experiencing an increase in larger debris entering the plant's water conduits. Large rocks are becoming lodged in the spiral cases and/or turbines.

El Vado Intake Structure Upgrade 1953



El Vado Sediment Passage (Typical)

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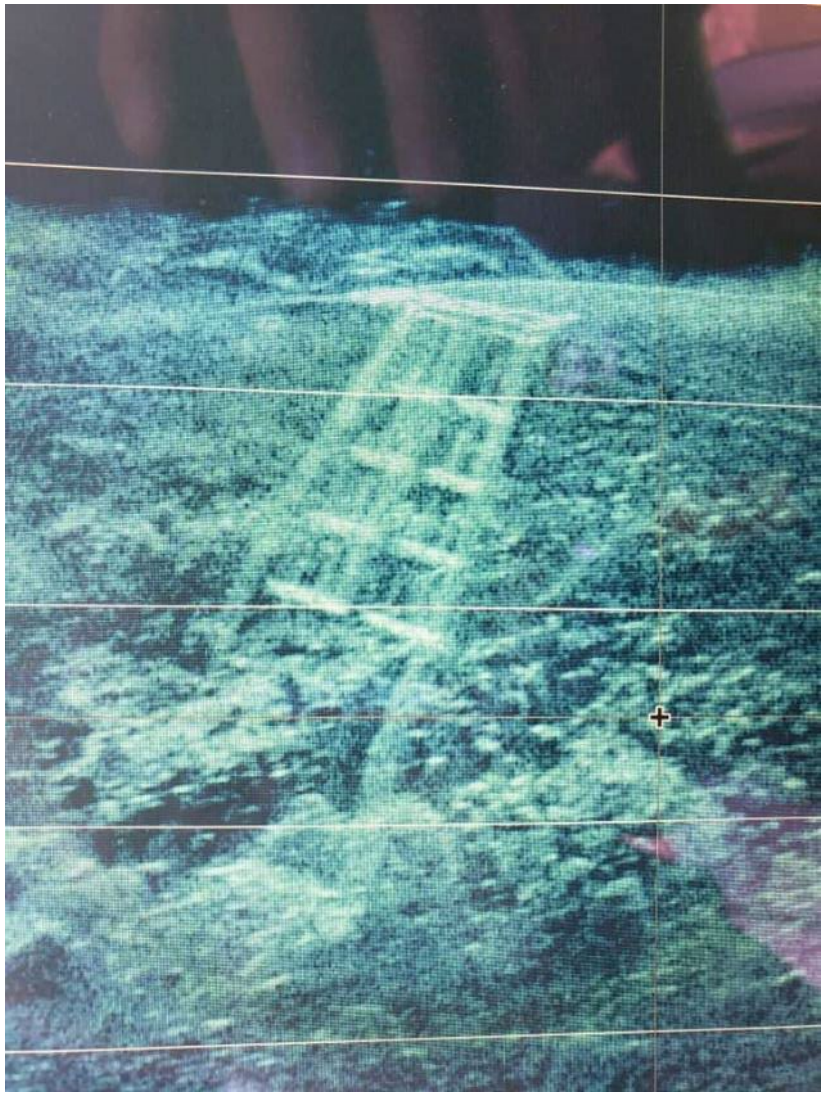
Abiquiu Intake Structure



Relative Size Van in Front of Trash Rack

Relative Size Man in Front of Trash Rack

Abiquiu Sediment Passage July 2021

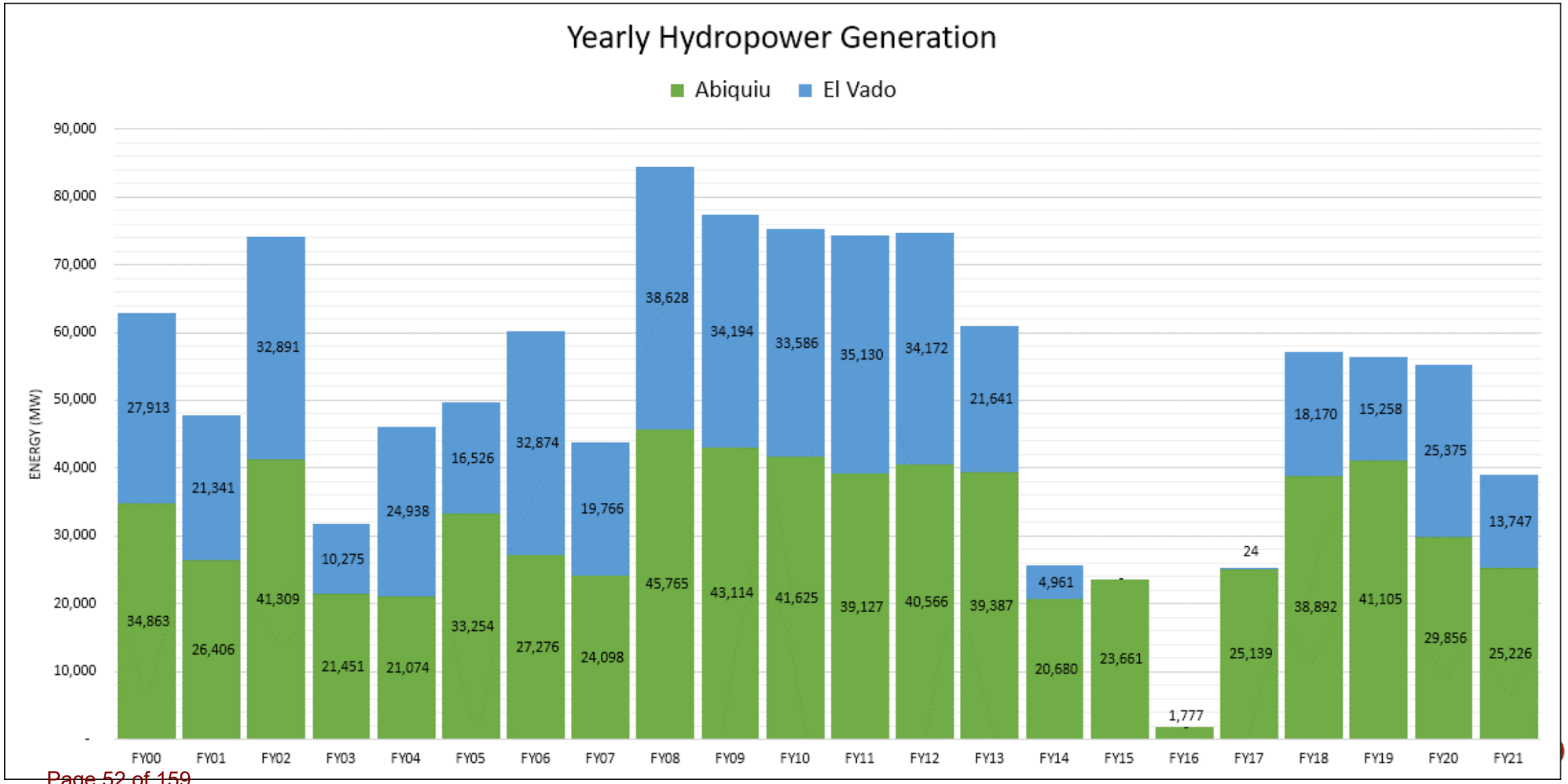
Abiquiu Unit #3 May 2017

Abiquiu Unit #1 August 2017

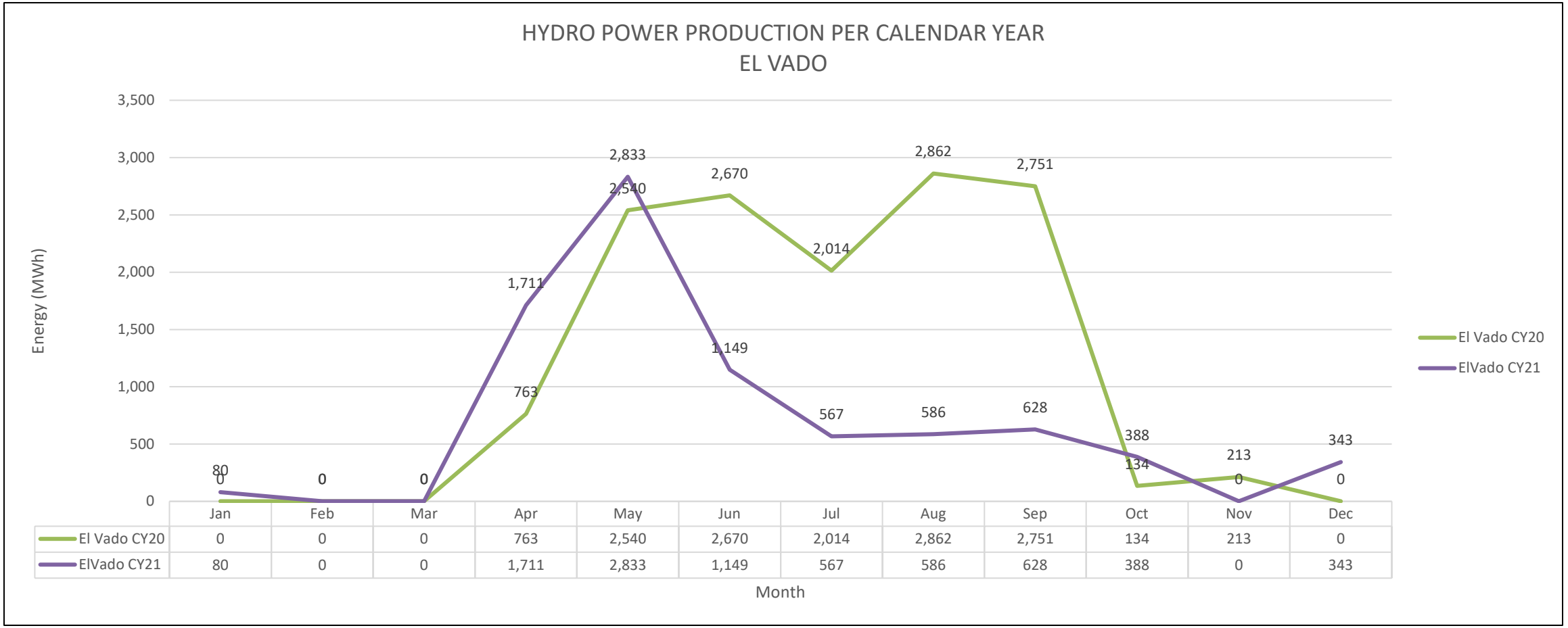
LOS ALAMOS

Abiquiu Unit #3 February 2020

Annual Hydro Generation

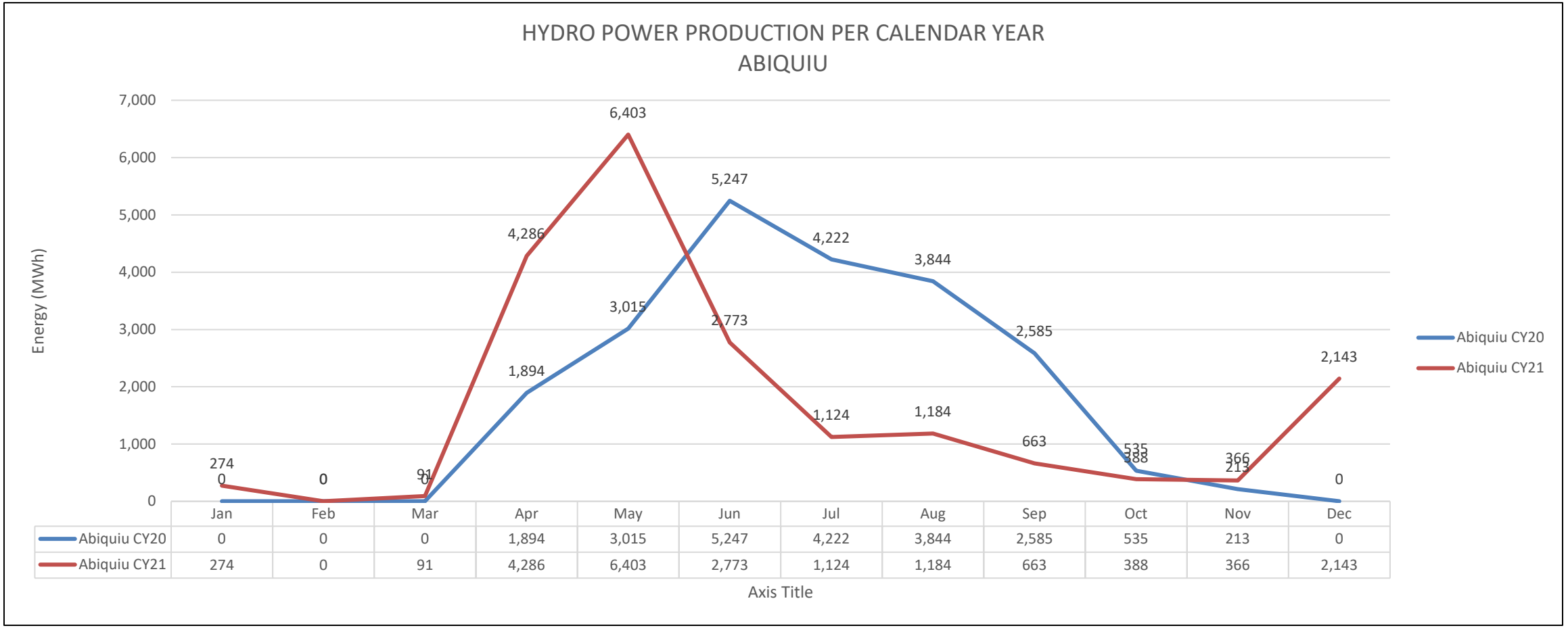


El Vado 2 Yr. Monthly Generation



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
El Vado CY20	0	0	0	763	2,540	2,670	2,014	2,862	2,751	134	213	0
ElVado CY21	80	0	0	1,711	2,833	1,149	567	586	628	388	0	343

Abiquiu 2 Yr. Monthly Generation



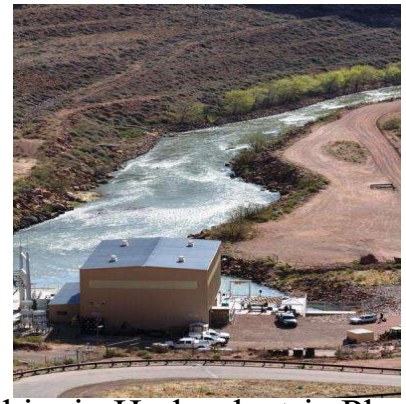
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Abiquiu CY20	0	0	0	1,894	3,015	5,247	4,222	3,844	2,585	535	213	0
Abiquiu CY21	274	0	91	4,286	6,403	2,773	1,124	1,184	663	388	366	2,143

Questions

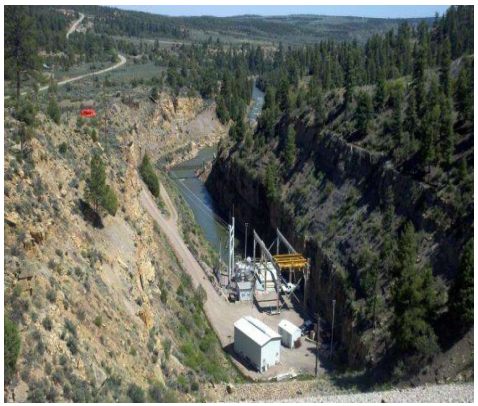
Electric Production Operations Briefing

August 18, 2021
Board of Public Utilities

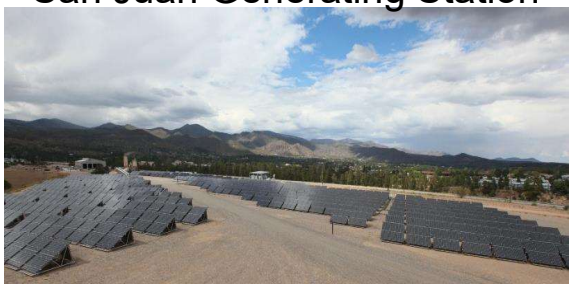
San Juan Generating Station



Abiquiu Hydroelectric Plant



El Vado Hydroelectric Plant



Los Alamos County Solar Array

Laramie River Station

WAPA Hydro Glen Canyon

LOS ALAMOS

Agenda

1. LAC Approved Resources
2. LANL's Approved Resources
3. Load Forecasts & Generation Resource/Options
4. CY2020 Blended Cost of Power
5. Performance Metrics
6. Summary of Energy Imbalance Market
7. Back Office & Month End Invoicing
8. Electric Coordination Agreement
9. Transmission
10. County Gas Supply
11. Resource Planning Challenges
12. Staffing Challenges

LOS ALAMOS

LAC Approved Resources

- 36 MW SJGS “coal” –September 30th Retirement
- 10 MW LRS “coal” – Life of the Plant (2040 – 2042)
- 17 MW Abiquiu run of the river hydro
- 9 MW El Vado run of the river hydro
- 1 MW Western Area Power Administration WAPA Federal hydro allocation
- 1 MW Solar PV
- Uniper 15 MW ATC, 15 years, 1st Qtr. 2022
- Uniper 25 MW ATC, 2.75 Years, Oct 1-Jun 30 2025

LOS ALAMOS

San Juan Generating Station (SJGS)-36 MWs

- Capital- SJGS has no remaining capital projects.
- O&M- SJGS continues to manage staffing issues as it prepares for shutdown. The plant continues to use contract labor to fill in the gaps.
  - A voluntary Reduction in Force was completed after June 30th due to Shutdown of Unit 1
  - Mine Issues have plagued the plant this year.
    - Geological issues
    - Coal Quality
- Decommissioning- Units 2&3 have been partly decommissioned to ensure plant safety
  - Sale of River to Lake Station to USBOR reducing decommissioning liability is in negotiation
  - All of the owners of San Juan are working together to complete the Final decommissioning study.
    - Current and former Ownership are reviewing a Class 1 estimate put together by Burns and Mcdonnell.
    - Final Decommissioning Study declaration starts a chain of events (Regulatory, Operationally, etc)
    - Final declaration is on hold to ensure the sale option to Enchant is fully investigated
  - Unit 1 – is in a safe shutdown mode and able to restart in the event of a sale to Enchant

- Mine Reclamation Continues
  - Westmoreland's proposal to take over the reclamation obligations from the SJGS participants is on hold for at least a year.
  - SJGS participants have Trust funds established for this obligation that are being considered in proposal
  - LAC has funded a Mine Reclamation Trust and continues to ensure it is properly funded as study estimates fluctuate.
    - The Mine Reclamation Oversight committee intends to commission a new study due to periods of high inflation. The intent is to have the study completed in 2023 and new funding curves established and funded at the end of 2023.

LOS ALAMOS

San Juan Generating Station City of Farmington (COF) Proposal

- COF continues to work with Enchant Energy to operate the SJGS post 2022.
- COF and Enchant continue to meet with SJGS Participants to work on a term sheet.
- Clean break from obligations and liability for the SJGS are being sought
  - Decommissioning
  - Mine Reclamation
- Economic viability of the Carbon Capture project is being developed
- Surety bonds on top of the decommissioning trust fund are required in the event Farmington and or Enchant bankruptcy
- Time is running out:
  - Burns and Mcdonnell have obtained bids to complete decommissioning work starting in 2023
  - Mine Reclamation activities have already begun, however Ownership was seeking a clean break.

LOS ALAMOS

Laramie River Station (LRS)-10 MWs

- LRS continues to be one of LAC's most economical resources
- Tube leaks continue to be a reoccurring issue
- Decommissioning
  - In 2015 LAC was provided Decommissioning Study for LRS. We have funded to our proportional share and continue to fund for inflationary adjustments.
  - As of now, plant closure and decommissioning is slated for 2040-2042

LOS ALAMOS

Laramie River Station (LRS)- Cont.

- Unlike SJGS, Mine Reclamation is built directly into fuel costs. LAC is in a good position regarding funding obligations.
- LAC continues to look for opportunities to capitalize on its long-term agreement by potentially swapping for renewable resources. (Uniper proposal, Arevon, Guzman and Tenaska)
- LAC, in parallel is also looking to negotiate a hard exit from LRS if the option exist in accordance with the Board adopted Strategic Initiatives.

Federal Hydro Power Allocation

- LAC's entitlement is 1MW
- DOE's entitlement is 10MW
- We have only been receiving between 60%-70% of our allocation from the Hydro Dam
- LAC has been able to avoid most of the increased pricing due to a positive reserve margin
  - We started taking the energy in July due to CT outage
- Drought conditions continue….

LOS ALAMOS

Landfill Solar PV array

- Solar site is 1,000 kW or 1 MW
- Currently 400 kW of the PV array is off-line due to failed inverter.
  - The Solar vendor selected to repair/replace the equipment failed to perform.
  - LAC has a proposal on the street to get the PV Site going again.

Ideal for rooftops, carports and ground-mount PV systems

LOS ALAMOS

Battery Energy Storage System BESS- Decommissioning

- Batter System was roughly 1.8 MW
- DPU has submitted the Invitation for Bids draft to Procurement.
  - Procurement is in the process of soliciting Bids
  - Last year's solicitation was halted due to appraisal issues for the assets.
- Procurement obtained an appraisal on the Lead Acid battery per the policy and is very close to publishing the bid.

800 kW x 2.3 MWh lead-acid battery

1-MW x 6 MWh NaS battery

LOS ALAMOS

Uniper – Firm Wind and Solar

- The Uniper 15 MW contract began supplying the Power Pool on January 1 2022
  - Pattern Wind portion of the project is completed in Eastern New Mexico
- The solar portion of the contract is in the four corners area and has a Commercial Operation date, 2023
- The Uniper 25 MW contract will begin to supply the Pool on Oct 1, 2022

LOS ALAMOS

Market

- Awaiting responses to LAC's Request for Information
- Our expected reliance on Market Purchases was increased due to the CT Outage.
- LAC has purchased its San Juan Replacement and energy will begin in flow on Oct 1, 2022
- Drought and threat of widespread heat are still threatening the grid and are priced throughout the summer
- The Power Pool has submitted interest in a Geothermal Project as part of UAMPS Resource Project.
  - Our share of these investigatory costs should be around $5,000.00

LOS ALAMOS

DOE Resources

- Western Area Power Administration (WAPA)
  - Up to 20 MW of Firm Federal hydro power, 15 MW of Capacity
- CT 25 MW Gas Turbine- Available mid to late August
- Local 115 KV transmission lines and substations to delivery power from interconnections with Public Service Company of New Mexico to LANL & LAC
  - DOE-NNSA Third Transmission line
- Supervisory Control And Data Acquisition (SCADA)
- Future potential combined cycle conversion to 45 MW and 10 MW Solar Array

LOS ALAMOS

CY2021 Blended cost of Power

RESOURCE UTILIZATION and COMPONENT COST SUMMARY
Calendar Year to Date
CY2021

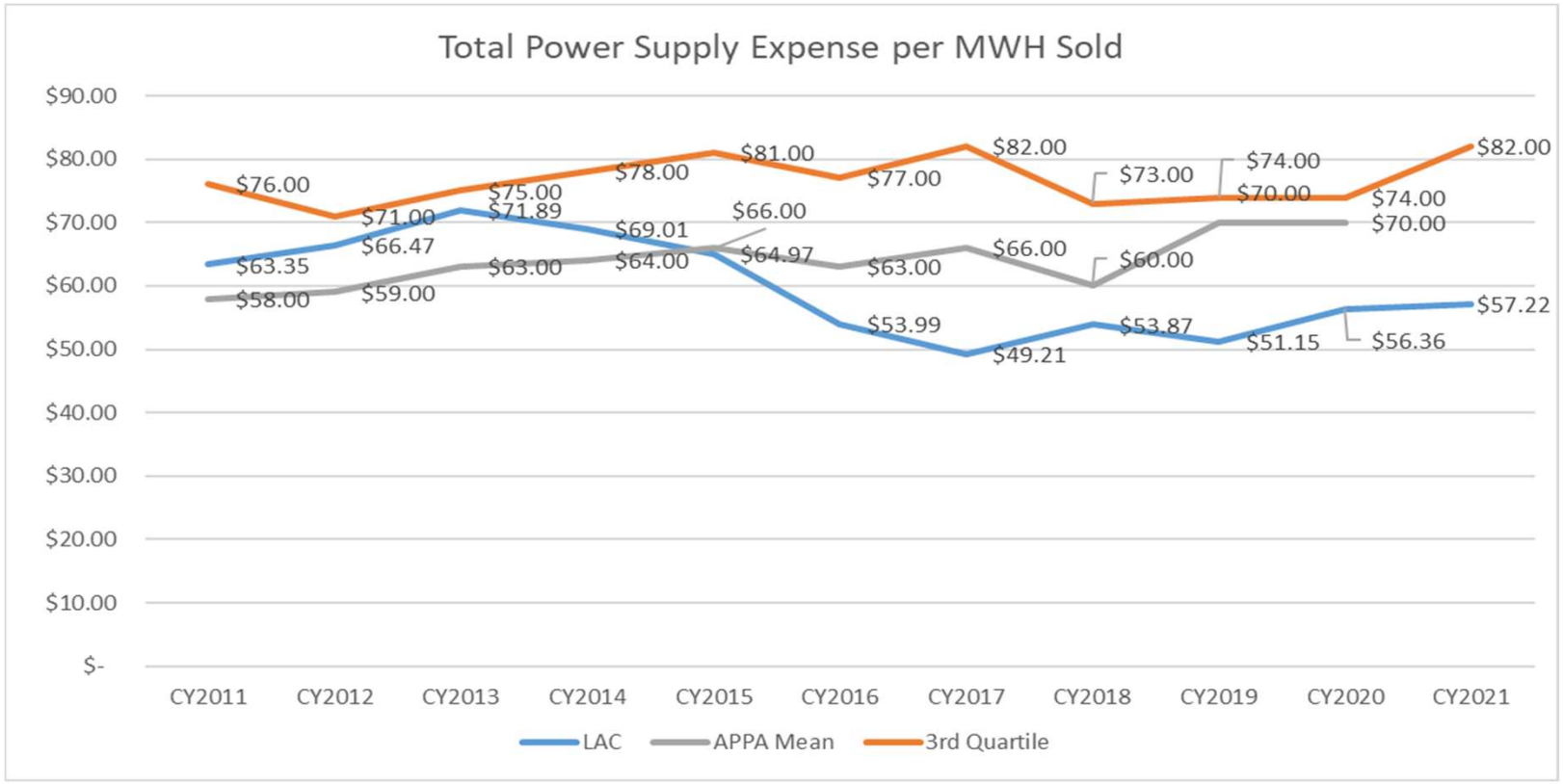
		FY Peak MW	Total MWH		TOTAL $		$/MW		
	DOE	55.266	360,807		25,222,945		69.91		
	LAC	15.667	118,493		7,469,954		63.04		
	TOTAL	70.933	479,300		32,692,899		68.21		

FY Peak 90.337
8/25/2021 @15:00

Month/Yr	Sources	Rated KW	MWH Sched	Demand Cost	Energy Cost	Demand $/MWH	Energy $/MWH	Total $/MWH	CF%	% Total MWH	% Total $
	Abiquiu	*14,000*	19,695	415,771	222,461	21.11	11.30	32.41	21.3	4.11%	2.33%
	Control Area					N/A	N/A	N/A	N/A	N/A	N/A
	Economy Purch		129,704		8,935,798		68.89	68.89	N/A	27.06%	32.58%
	Economy Sales		-10,929		-344,384		31.51	31.51	N/A	-2.28%	-1.26%
	El Vado	*10,000*	8,285	140,406	499,042	16.95	60.23	77.18	12.6	1.73%	2.33%
	Lincoln	*10,000*	53,964	1,186,573	817,827	21.99	15.16	37.14	81.8	11.26%	7.31%
	Misc Expense			1,496,312		N/A	N/A	N/A	N/A	N/A	5.46%
	Misc. Interchange		-10,497						N/A	-2.19%	N/A
	PV Solar		227	10,019							
	San Juan	*36,000*	213,692	4,640,891	6,964,964	21.72	32.59	54.31	89.9	44.58%	42.32%
	TA-3 Steam	*20,000*				N/A	N/A	N/A	N/A	N/A	N/A
	CGTG	*24,000*	91	4,024		44.17		44.17	0.1	0.02%	0.01%
	WAPA (LAC)	*1,000*	5,095	75,117	55,494	14.74	10.89	25.64	77.2	1.06%	0.48%
	WAPA Firm (DOE)	*11,000*	69,973	1,383,129	920,970	19.77	13.16	32.93	96.4	14.60%	8.40%
	WAPA Peaking (DOE)					N/A	N/A	N/A	N/A	N/A	N/A
	Total		479,300	9,352,242	18,072,172	19.51	37.71	57.22		100%	100%
	Transmission Cost			5,409,914		11.29					
	DOE Revenue for EIA		360,806.87	26,560,895							

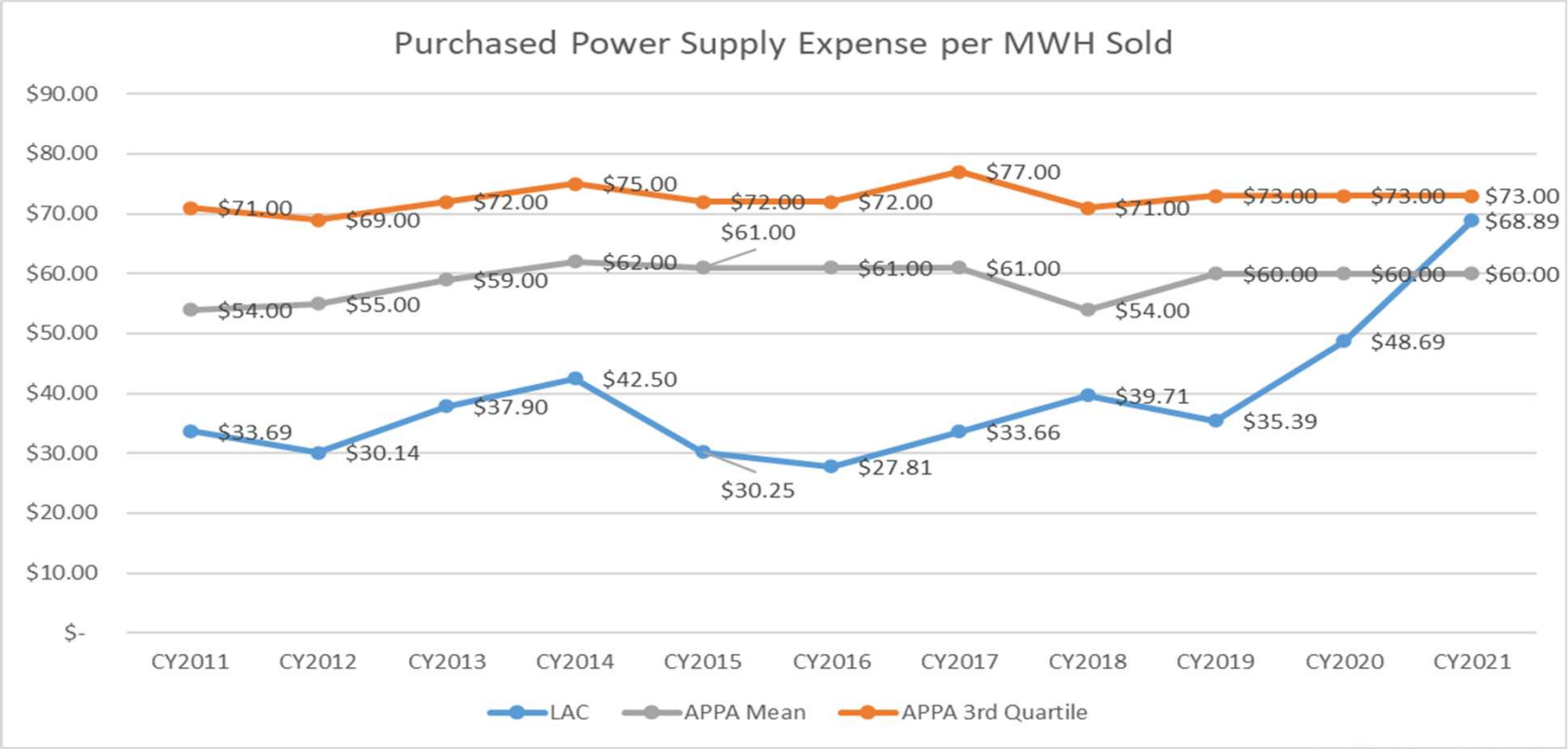
LOS ALAMOS

Performance Metrics- Total Expense



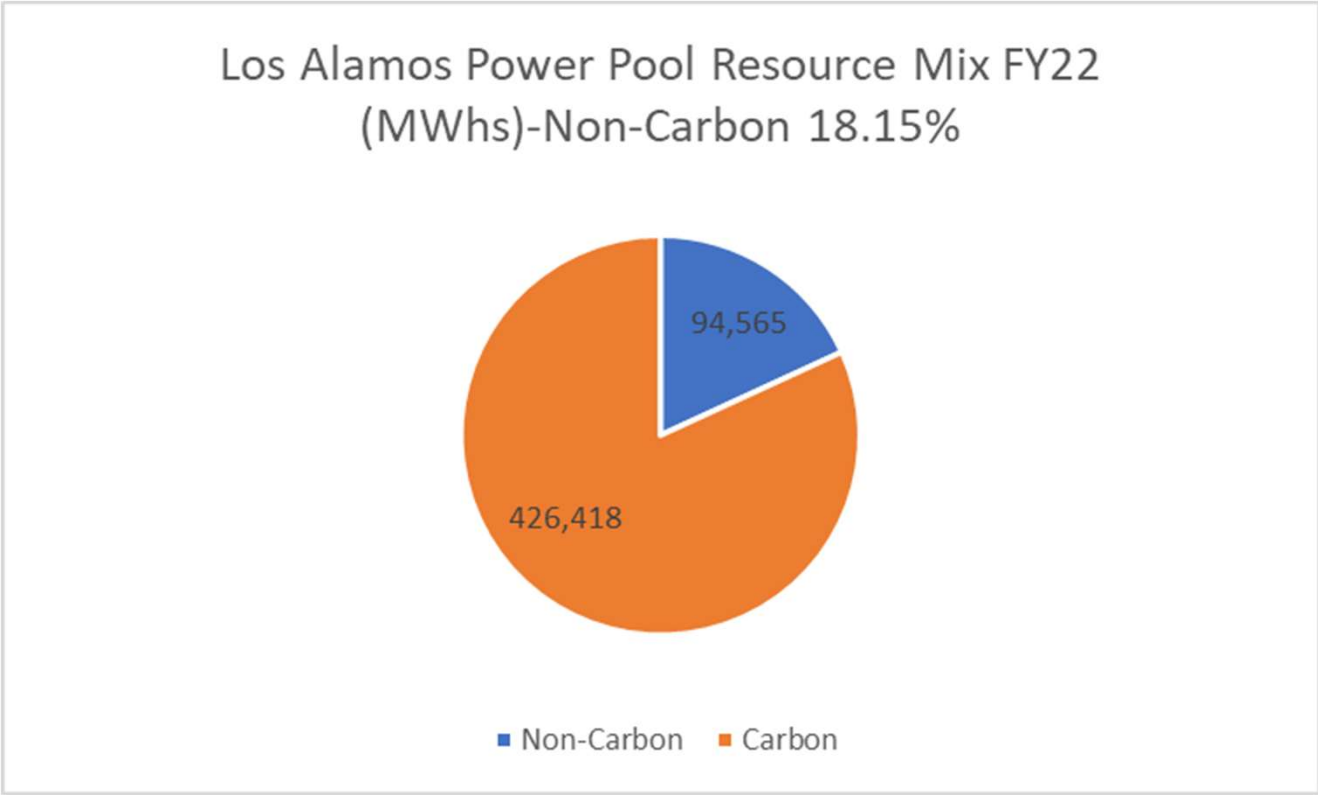
LOS ALAMOS

Performance Metrics- Purchased Power Expense



LOS ALAMOS

FY 2022 Resource Mix



Resource	Classification	MWhs Produced
Abiquiu	Non-Carbon	18,050
WAPA (LAC)	Non-Carbon	4,221
WAPA Firm (DOE)	Non-Carbon	56,965
El Vado	Non-Carbon	5,604
Uniper Renewable	Non-Carbon	9,725
Non-Carbon Total		**94,565**
Economy Purch incl.Uniper	Carbon	149,706
Lincoln	Carbon	54,480
San Juan	Carbon	222,209
CGTG	Carbon	23
Carbon Total		**426,418**
Total Energy Generated		**520,983**

LOS ALAMOS

Post 2025 ECA Negotiations

- Summer 2019, staff presented DPU's position on a post 2025 ECA to the Board and "Council subcommittee for concurrence and guidance.
- In October 2019, the post 2025 ECA options were presented to DOE/NNSA for consideration.
- DOE presented first draft of the agreement with Term sheet, July 2021 negotiating meeting.
- LAC and DOE are working on finalizing the Statement of Work and Exhibits for the future Contract
  - Board and Council policy committee were consulted on some of the terms in March of 2022

LOS ALAMOS

Target Dates for ECA

- Both Parties agree to explore contract assuming DOE-NNSA has Interagency Agreement with WAPA allowing them to contract for 40 years under WAPA's authority to secure the necessary resources to meet LANL's load projections
  - A recent memo from the procurement officials with in the NNSA is very promising regarding the ECA
    - Allows for up to 20 year terms within the NNSA
    - Allows NNSA to evaluate solicitations on environmental factors rather than lowest cost
- In the interim period prior to having the IA completed, the LAPP will operate within the current constraints, securing a PPA to meet the load requirement for the LAPP from 2022 through June 2025
- June 2023 Negotiating teams develop tentative agreement. LAC disposition of excess generation will have to be dealt with 24 months prior to contract expiration if parties have not reached a tentative agreement.
- June 2024 LAC & DOE-NNSA seek approval of post 2025 ECA
- June 30, 2025, current ECA expires and Post 2025 ECA begins

LOS ALAMOS

Transmission and Transmission Contracts

LAC is reviewing existing Transmission contracts due to market and regulation changes.

- PNM
  - Federal Energy Regulatory Commission (FERC) 864 Filing
    - Received FERC Response in July of 2022, Further settlement discussion to follow
  - Open Access Transmission Tariff (OATT) Revision - resulting from joining Energy Imbalance Market
    - NITSA/NOA Documents finally updates and will be presented to Board and Council in August
  - 2022 Annual Formula Rate True-Up
- LRS WAPA Transmission Renewal
- LANL
  - 3rd Transmission Line- Still talking stakeholder input on route from Norton
  - TA-3 Substation- Online

LOS ALAMOS

Transmission- Schedule for NORA Upgrade

- Transmission Northern Rio Arriba Co-op (NORA)-
  - The 69 kV Transmission line From the Coyote substation to the Spills Substation that LAC utilizes to export power from EL Vado is in need of complete replacement (poles and wires).
  - 2020 Mid August- NORA will begin phase one starting at the Spills Substation and heading south approximately 10 miles with a new parallel line in the existing ROW.
  - 2022-2023 NORA will start at the Coyote substation going North approximately 10 miles with new parallel line in existing ROW
  - 2023-2024 NORA will start the middle 10 mile section after they have secured the additional ROW to construct the new line in parallel

LOS ALAMOS

County Gas Supply

- Daily gas nominations
- NMMEAA
- System Alerts, NM Gas Company
  - Just completed a rate case with with NMGC, Proposed increase of 26% was reduced to 9.7%
- Extreme weather events
- Utility Operations (gas water well Pajarito Well No. 4)

Resource Planning Challenges

- RFI-Pending
- Drought Impacts (WAPA and LAC Hydro)
- Regulatory Impacts (SJGS, LRS)
- Increased reliance on volatile market power pricing
- Dispatchable resources to balance load and generation
- Electric Coordination Agreement

(Mitigate risks with Integrated resource planning)

LOS ALAMOS

Staffing Challenges

- Currently seeking a Power System Supervisor

Questions

?

Agenda No.:	4.B.
Index (Council Goals):	DPU FY2022 - 3.0 Be a Customer Service Oriented Organization that is Communicative, Efficient, and Transparent
Presenters:	Deputy Utilities Manager - Electric Distribution Stephen Marez, Deputy Utilities Manager - Electric Distribution
Legislative File:	**15801-22**

Title
Quarterly Update on Utility System - Electric Distribution

Body
This is an update to last year's Electric Distribution Condition Assessment. The update provides the strategy for operating and maintaining the electric distribution system for Los Alamos and White Rock, and provides an overview of O&M and Capital needed to provide safe and reliable electric utility services.

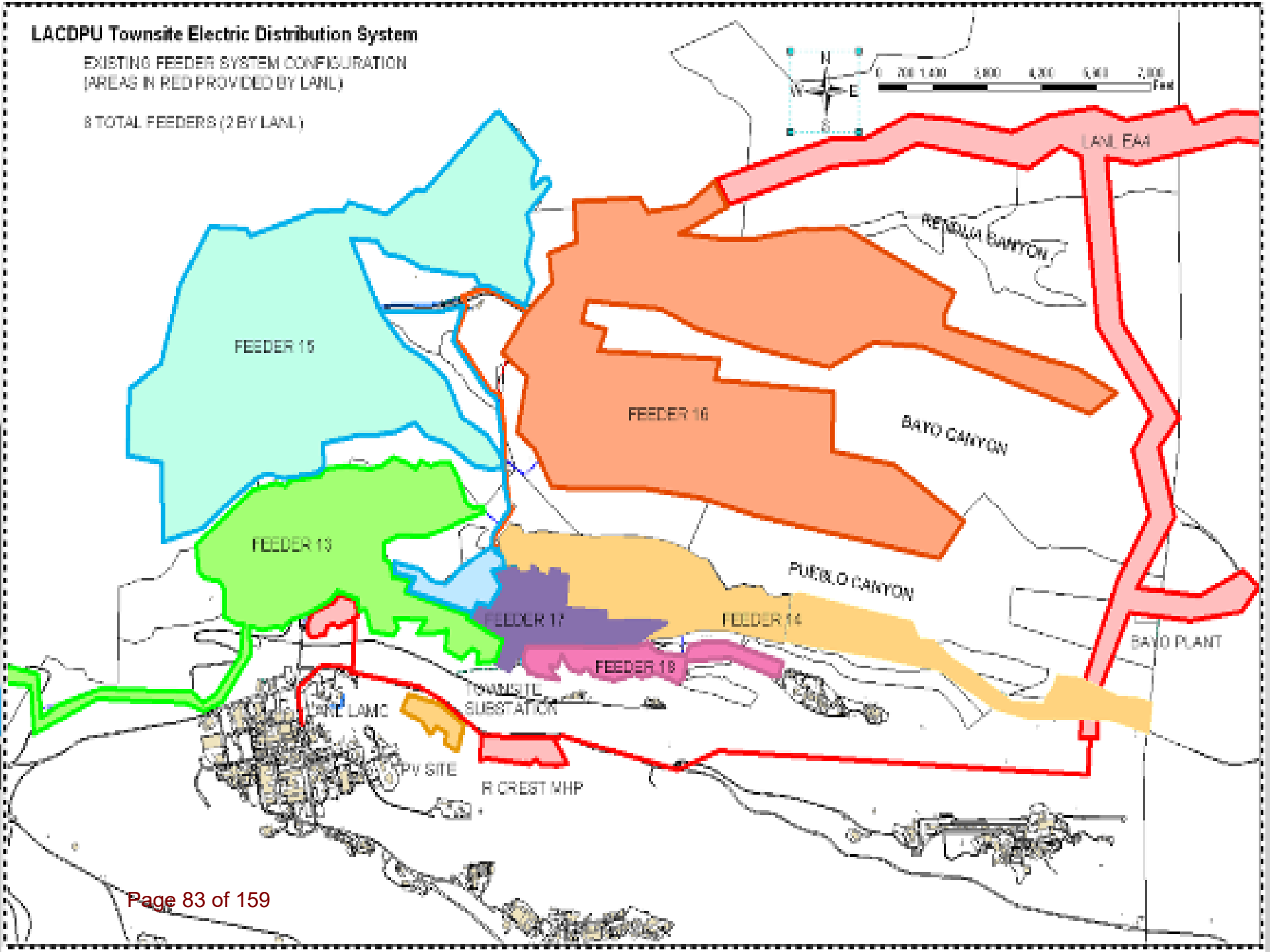
Attachments
A - 2022 Electric Distribution Presentation

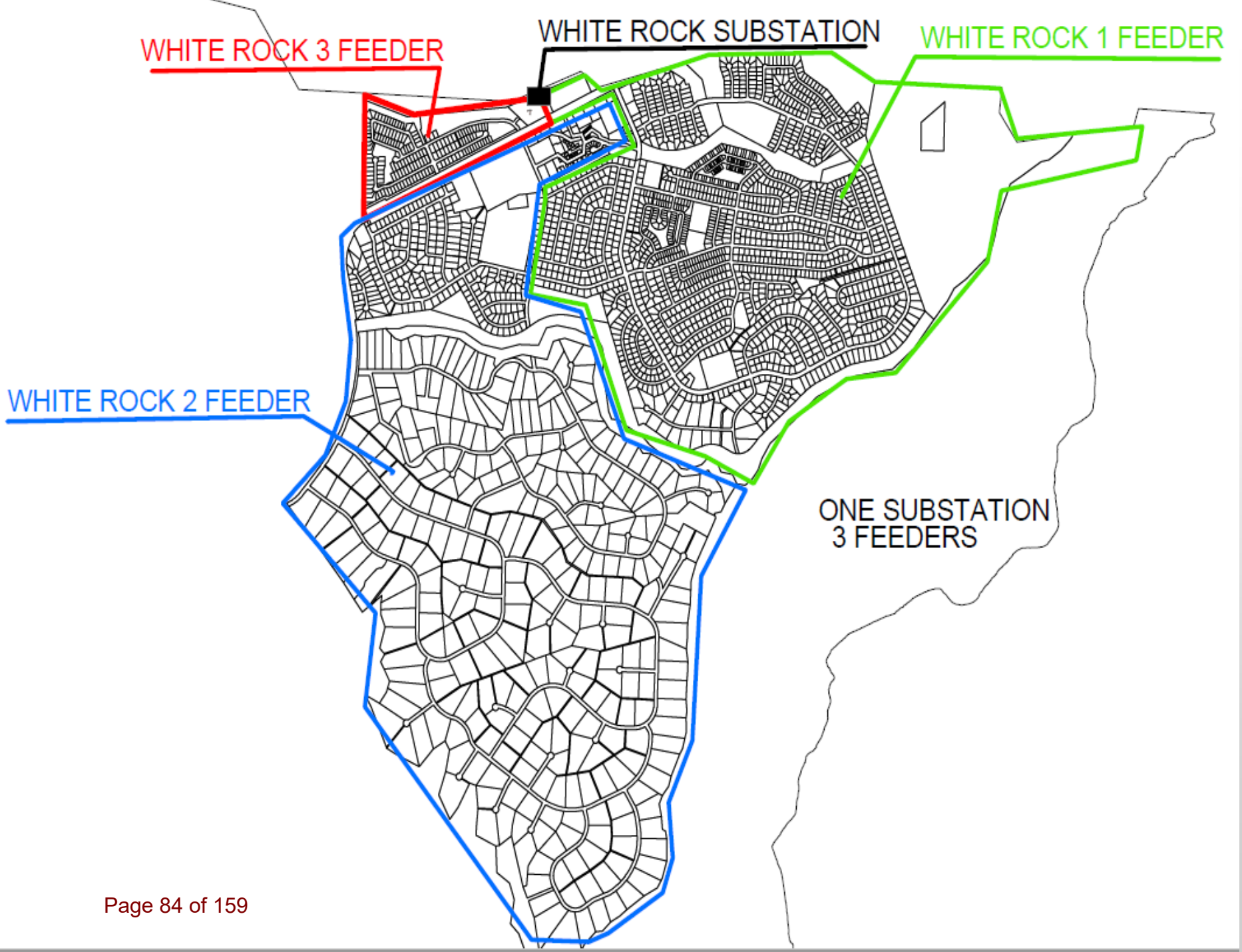
Department of Public Utilities

Electric Distribution

Stephen Marez, P.E.

Acting Deputy Utility Manager


LACDPU Townsite Electric Distribution System
EXISTING FEEDER SYSTEM CONFIGURATION
(AREAS IN RED PROVIDED BY LANL)
8 TOTAL FEEDERS (2 BY LANL)
N
E
S
0 700 1,400 2,800 4,200 5,600 7,000 Feet
LANL EA4
PENELLA CANYON
FEEDER 15
FEEDER 16
BAYO CANYON
FEEDER 13
PUEBLO CANYON
FEEDER 17
FEEDER 14
BAYO PLANT
FEEDER 18
TOWNSITE
SUBSTATION
PV SITE
R CREST MHP


WHITE ROCK 3 FEEDER
WHITE ROCK SUBSTATION
WHITE ROCK 1 FEEDER
WHITE ROCK 2 FEEDER
ONE SUBSTATION
3 FEEDERS

FY22 ACHIEVEMENTS

- SWITCH REPLACEMENTS
- WHITE ROCK SEWER PLANT TRANSFORMER
- AMI METER INSTALLATIONS (ONGOING)
- FAIRWAY LIFT STATION POWER
- EL GANCHO LIFT STATION POWER
- RIM TRAIL TUNNEL
- AQUATIC CENTER TRANSFORMER UPGRADE
- WHITE ROCK NON-POTABLE WATER POND / PUMPS

FY22 ACHIEVEMENTS

- DP ROAD PHASE ONE ELECTRIC LINE EXTENSION
- EL MIRADOR SUBDIVISION ONGOING PHASE 2
- EXTENSIVE TREE TRIMMING EFFORTS
- POWER POLE REPLACEMENTS
- PHOTO VOLTAIC SYSTEM INSTALLATIONS
- THE BLUFFS APARTMENT COMPLEX TRANSFORMER
- CANYON WALK APARTMENTS
- STARBUCKS
- TOWNSITE AND WHITE ROCK STATION AIR CONDITIONER INSTALLATIONS

BUDGET VARIANCES FY22

BUDGET SPENDING IN FY21 AS OF JULY11, 2022

OPERATING EXPENSES	FY 2022 BUDGET	FY 2022 ACTUAL	% OF BUDGET
SUPERVISION, MISC. DIRECT ADMIN	761,574.61	661,980.21	87%
SUBSTATION MAINTENANCE	67,873.85	53,455.59	79%
SWITCHING STATION MAINTENANCE	102,552.81	64,169.08	63%
OVERHEAD MAINTENANCE	566,637.85	567,051.08	100%
UNDERGROUND MAINTENANCE	490,601.43	667,543.61	136%
METER MAINTENANCE	193,729.21	98,912.72	91%

Current Budget

The current annual capital budget for electric distribution is $300k for overhead and $400k for underground system replacements. This annual level of spending will minimally fund the in-house replacement of transformers, switches, poles and conductors. All replacements are prioritized through the asset management program.

Three phase transformers are now over $80,000 each

Single phase transformers are now over $15,000 each

Switches are now over $20,000 each

FY23
CAPITAL PROJECTS BUDGET

DESCRIPTION	BUDGET COST
OVERHEAD SYSTEM REPLACEMENTS	
Poles, cross-arms, open secondary, etc.	
White Rock	$150,000
Los Alamos	$150,000
Subtotal OH	**$300,000**
URD REPLACEMENTS	
White Rock	$200,000
Los Alamos	$200,000
Subtotal UG	**$400,000**

ACTIVE PROJECTS

- EL MIRADOR SUBDIVISION PHASE 2 AND PHASE 3
- CHERYL AND CONNIE PRIMARY REPLACEMENT
- AMI COMMERCIAL METER TESTING AND INSTALLATIONS
- LASS SUBSTATION ACTIVATION
- LASS FEEDERS (CANYON CROSSING & DIAMOND)
- EA4 CIRCUIT REPLACEMENT DESIGN
- LOS PUEBLOS & TOTAVI REPLACEMENT DESIGN

ACTIVE PROJECTS

- THE BLUFFS APARTMENTS METERING
- DP ROAD PHASE TWO UTILITY REPLACEMENT PROJECT (SPRING 23)
- RESIDENTIAL PV SYSTEM INSTALLATIONS
- WHITE ROCK SEWER PLANT
- SKI HILL WATER LINE PROJECT
- THE HILLS SUBDIVISION
- EL VADO HYDRO PLANT TRANSFOMER
- ARKANSAS APARTMENTS

O&M PROJECTS

- COMPLETE PRIORITY ONE ITEMS FROM CONDITION ASSESSMENTS.
- THREE PHASE RECLOSER INSTALLATIONS
- POLE REPLACEMENTS ONGOING
- SWITCH REPLACMENTS ONGOING
- TRANSFORMER REPLACEMENTS (DELAYED)
- OUTAGE REPAIRS
- WHITE ROCK SUBSTATION UNIT 1 LOAD TAP CHANGER
- STATION METER DISPLAY REPLACEMENTS

ONGOING ACTION ITEMS

- TRAINING FOR LINEMEN AND ENGINEERING STAFF
- COMPLETE PREPERATION FOR LASS COMMISSIONING
- INSTALL THREE PHASE RECLOSERS WHERE NEEDED
- COMPLETE PROCEDURE DOCUMENTATION
- CONTINUE MILSOFT SYSTEM MODEL
- WORK WITH PROCURMENT ON LONG LEAD ITEMS
- AMI COMMERCIAL METERS- TESTING & INSTALLATION
- COMMISSION THE L.A. SWITCH STATION
- INSTALL CONDUCTORS FROM EAST JEMEZ ROAD TO DIAMOND DRIVE.

O&M GOALS

- CONTINUE WITH NO LOSS TIME ACCIDENTS
- COMPLETE THE CAPITAL PROJECTS THAT ARE SCHEDULED
- CONTINUE WITH THE ASSET MANAGEMENT PROGRAM
- CONTINUE WITH UG LIVE-FRONT TRANSFORMER REPLACEMENT PROGRAM
- CONTINUE INSPECTIONS AND MAINTENACE PROGRAM
- DEFINE AND DOCUMENT PROCEDURES

O&M GOALS

- MAINTAIN A SAIDI < 1 HOUR
- MAINTAIN ACCURATE SYSTEM MAPS AND DRAWINGS
- STAY WITHIN BUDGET
- CONTINUE WITH THE UNDERGROUND POWER LINE SEGMENT REPLACEMENTS
- CONTINUE WITH OH POLE AND CROSS-ARM REPLACEMENT PROGRAM

O&M PER ALL ACCOUNTS

	O&M Per All Accounts	APPA Mean Benchmark	Total O&M	Average # of Accounts
FY16	523.61	574.00	4,605,675.00	8796
FY17	491.68	604.00	4,514,158.00	9181
FY18	698.43	655.00	6,700,061.00	9593
FY19	417.10	635.00	3,573,391.00	8561
FY20	272.14		2,384,518.00	8762
FY21	308.18		2,709,888.03	8793

CHALLENGES

- ELECTRICAL ENGINEERING STAFF PROVIDES DESIGN AND PROJECT MANAGEMENT OF ELECTRIC FACILITY INSTALLATIONS ON ALL COUNTY AND CUSTOMER DEVELOPMENTS
- INVENTORY SUPPLY CHAIN DELAYS OVER FIFTY WEEKS FOR MOST MATERIALS, CABLE , TRANSFORMERS, TERMINATONS, METERING EQUIPMENT.

CHALLENGES

Delays in Electric Distribution system projects are due to the increased number of County and private projects.

The construction of homes and apartments did not slow down during COVID. Electric Distribution staff worked on site during the entire COVID pandemic and continue to constantly provide dependable service to our customers.

CHALLENGES

- TIME SCHEDULE CONFLICTS BETWEEN OPERATIONS, CAPITAL PROJECTS AND COUNTY PROJECTS
- METER MAINTENANCE IN THE NEW SYSTEM
- TYLER-MUNIS SYSTEM ASSET DATA ENTRY AND FINANCIAL DATA ACQUISITION.

CHALLENGES

No projects whether public or private are delayed due to Electric Distribution Department performance or material supplies.

This may change if the supply chain does not recover soon. The utility must maintain adequate reserves of materials for emergency outage response.

It is difficult to operate with 50+ week delays in product delivery.

The inflation of material prices is also making it difficult to accurately provide job cost estimates.

The utility supplies transformers, switches, conductor and vaults for all projects. The costs are passed along to the projects.

CABLE PULLING EQUIPMENT

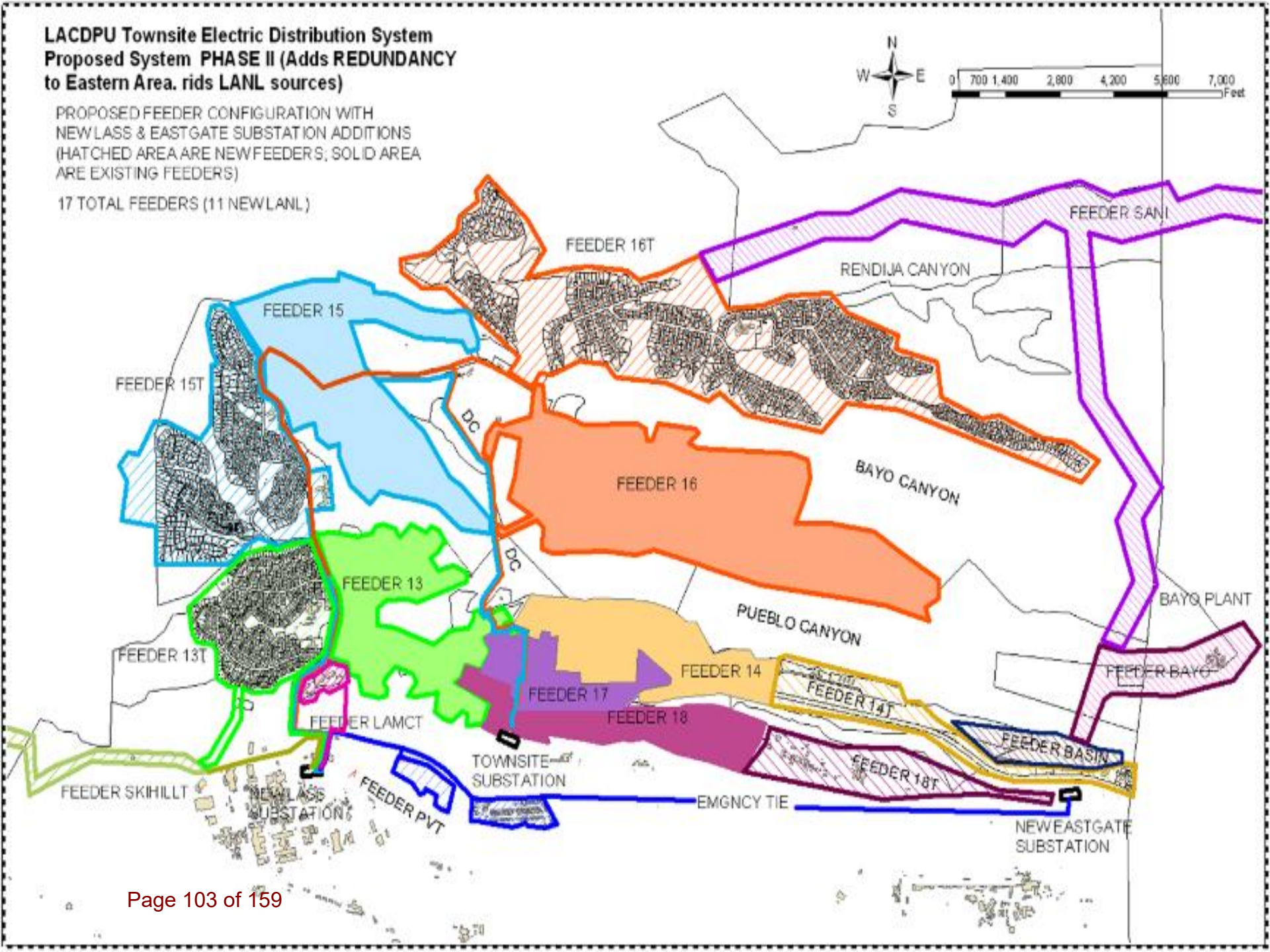
THE CABLE PULLING MACHINE IS USED TO INSTALL UNDERGROUND CONDUCTORS AND THIS MACHINE IS FAILING.

MANAGEMENT AND FLEET ARE WORKING TOGETHER TO REPLACE THE MACHINE ONE YEAR IN ADVANCE OF THE SCHEDULED REPLACEMENT DATE. THE OVERALL COST FOR THE PULLER MACHINE WILL BE NEAR $175,000 .

THIS PIECE OF EQUIPMENT IS ESSENTIAL TO UNDERGROUND ELECTRIC OPERATIONS AND CAPITAL PROJECTS.

System Management

- **Perform System Analysis**
- **Utilize Milsoft/GIS interface for system model and mapping;**
- **Maintain protective device coordination**
- **Circuit configuration to provide redundancy**
- **New Los Alamos Switch Station for added redundancy**
- **Ensure GIS maps and Feeder 1-lines are up-to-date;**
- **Provide accurate switching procedures**


LACDPU Townsite Electric Distribution System
Proposed System PHASE II (Adds REDUNDANCY to Eastern Area. rids LANL sources)
PROPOSED FEEDER CONFIGURATION WITH NEW LASS & EASTGATE SUBSTATION ADDITIONS (HATCHED AREA ARE NEW FEEDERS; SOLID AREA ARE EXISTING FEEDERS)
17 TOTAL FEEDERS (11 NEW LANL)
N
W
E
S
0 700 1,400 2,800 4,200 5,600 7,000 Feet
FEEDER 16T
FEEDER SANI
RENDIJA CANYON
FEEDER 15
FEEDER 15T
DC
FEEDER 16
BAYO CANYON
DC
FEEDER 13
BAYO PLANT
PUEBLO CANYON
FEEDER 13T
FEEDER 14
FEEDER 14T
FEEDER BAYO
FEEDER 17
FEEDER 18
FEEDER LAMCT
FEEDER BASIN
FEEDER 18T
TOWNSITE SUBSTATION
FEEDER SKIHILLT
NEW LASS SUBSTATION
FEEDER PVT
EMGNCY TIE
NEW EASTGATE SUBSTATION

Estimated Cost of Replacements

PROJECT SUBDIVISION OR AREA	TRENCH LENGTH FEET	DIGGING CONDITIONS	YEAR INSTALLED	ESTIMATED COST OF REPLACEMENT	PROJECT DURATION	PRIORITY
LA SENDA PIEDRA LOOP	25000	BASALT	1970	$2,500,000	2 YEAR PROJECT	1
LOS PUEBLOS NAVAJO	9500	HARD TUFFA	1978	$1,400,000	1 YEAR PROJECT	2
LA VIST, SIERRA VISTA, PINION	8000	BASALT / FILL	1970-76	$1,200,00	2 YEAR PROJECT	3
TIMBER RIDGE, LOMA VISTA, RIDGEPARK, OPENNHEIMER	4000	TUFFA / FILL	1975-80	$600,000	1 YEAR PROJECT	4
RIDGECREST, HASTA LA VISTA	25000	BASALT / FILL	1970	$2,500,000	2 YEAR PROJECT	5
EASTERN AREA WEST OF CANYON ROAD	4000	TUFFA / FILL	1978	$400,000	1 YEAR PROJECT	6
ARAGON TO MEADOW LANE	46661	BASALT / FILL	1970-80	$5,500,000	3 YEAR PROJECT	7
WESTERN AREA	9000	TUFFA / FILL	1980	$700,000	2 YEAR PROJECT	8

TRENCH AND CONDUIT INSTALLATIONS BY ON CALL CONTRACTORS . COSTS INCLUDE PAVEMENT AND SIDEWALK REPAIRS.

Switches

- 168 Pad mount Switches
- Service Life Estimated @ 20 Years
- 6 remaining switches installed in the 1970's and 1980's
- They are prioritized for replacement
- Almost all switch replacements occur at night due to long outage requirements on major feeder sections. Switches are evaluated and replaced as listed in the priority list.


WARNING
KEEP OUT
3
2
1
OPEN
CLOSED
DANGER

SWITCHES BY AGE AND CIRCUIT

	QUANTITY	PRIOR TO 2006	2006-2021
CIRCUIT 13	25	10	15
CIRCUIT 14	30	9	21
CIRCUIT 15	37	17	20
CIRCUIT 16	19	7	12
CIRCUIT 17	11	2	9
CIRCUIT 18	14	1	13
WHITE ROCK 1	11	9	2
WHITE ROCK 2	7		7
WHITE ROCK 3	5		5
EA4	3	1	2
BANDELIER	8		8
TOTAL	171	56	115

Transformers

- 217 Three Phase Transformers

  11% Over 30 Years Old

  Replacement Cost Approximately

  $80,000 each

- 1294 Single Phase Transformers

  20% Over 30 years Old

  Replacement Cost Approximately

  $15,000 each

- Service Life 25 to 40 Years
- LIVE FRONT TRANSFORMERS ARE REPLACED AS PART OF CAPITAL AND OPERATIONS ACTIVITIES. AL OTHERS ARE REPLACED WHEN FAILURE OCCURS

3-Phase Transformers by age and circuit

	QUANTITY	1980 - 1989	1990 - 1999	2000 - 2006	2006-2021
CIRCUIT 13	48	10	12	15	11
CIRCUIT 14	42	15	13	5	9
CIRCUIT 15	13		5	4	4
CIRCUIT 16	12		5	2	5
CIRCUIT 17	40	4	12	20	4
CIRCUIT 18	26	6	5	7	5
WHITE ROCK 1	16		4	8	4
WHITE ROCK 2	15		6	7	2
WHITE ROCK 3	0				
TOTAL	217	24	18	72	103

1- Phase Transformers by age and circuit

	QUANTITY	1980 - 1989	1990 - 1999	2000 - 2006	2006-2021
CIRCUIT 13	308	116	52	75	65
CIRCUIT 14	58	10	14	20	14
CIRCUIT 15	235	18	37	80	100
CIRCUIT 16	*257*	67	30	47	113
CIRCUIT 17	8				8
CIRCUIT 18	15			6	9
WHITE ROCK 1	188	25	43	49	71
WHITE ROCK 2	217	50	60	57	50
WHITE ROCK 3	8				8
TOTAL	1294	286	236	334	438

Power Poles

- 2386 Poles
- Inspected for Structural Integrity and Treated in 2006, 2013 and 2021
  - 286 Rejects (12%)
  - 160 Priority (7%)
  - Useful Life 60+ Years if Treated in Regular Intervals

OVERHEAD MAINTENANCE

7 wood X-arms

2 fiberglass X-arms

- OH maintenance will be ongoing until the entire system is replaced

2006 Power Pole Study and Treatment
By PMC (Pole Maintenance Company)

Results in 258 rejected poles being braced with steel
to ensure integrity of each structure until replacement

2013 Power Pole Study and Treatment
By Osmose

Results in the 28 rejected poles added to the list

2015 Power Pole Replacement Project
By Elite Power and Recovery

Results in the replacement of 286 Power Poles
As part of the circuit 15 and 16 replacement Project

2021 Power Pole Study
and Treatment Project 20 rejected

2006 Power Pole Study

TABLE 3.3		Totals by Area				
Pole Series	Area	Pole Count	Total Rejects	Considered Priority of the Rejects	Percent of Total Rejects	Percent Priority Rejects
1000	Western Area	363	36	16	10%	4%
2000	Eastern Area	155	14	8	9%	5%
3000	North Communit	656	60	39	9%	6%
4000	North Mesa	128	13	11	10%	9%
5000	Barranca Mesa	256	44	18	17%	7%
6000	White Rock	343	53	35	15%	10%
7000	Pajarito Acres	250	22	16	9%	6%
8000	Ski Hill	44	2	2	5%	5%
9000	S-18	191	26	15	14%	8%
Grand Totals		2386	270	160	11%	7%

Power Poles Replaced Since 2006

Pole Series	Area	POLES REPLACED SINCE 2006
1000	Western Area	60
2000	Eastern Area	35
3000	North Community	80
4000	North Mesa	20
5000	Barranca Mesa	52
6000	White Rock	45
7000	Pajarito Acres	65
8000	Ski Hill	25
9000	EA4	30
Grand Totals		412

Pole Top Assemblies

- Inspected on an Annual Rotation

  by LACU Operations Staff to support

  AMT recommendations in preparation of the Annual Budget

- Goals: **NESC Compliant Attachments**

  Condition of Pole Assemblies

  Identify Attachments

  Structural Integrity of Crossarms and Equipment

Conductors

- Overhead 34% of Total
- Service Life Approximately 30 Years

- Underground 66% of Total
- UG Primary Cable Total 697,885‘ (per GIS 2021)

  -In Conduit 72%

  -Direct Bury 28%

  Service Life Approximately 20 TO 30 Years Depending on installation method and type

Conductors install underground prior to 1980 are almost always direct buried or inserted in existing pipe.

Age of Overhead Conductors by Circuit

	1980 - 1989	1990 - 1999	2000 – 2006	2006-2021
CIRCUIT 13		20%		10%
CIRCUIT 14				
CIRCUIT 15		20%		80%
CIRCUIT 16	24%		25%	51%
CIRCUIT 17				
CIRCUIT 18				
WHITE ROCK 1	75%	10%	5%	
WHITE ROCK 2	85%	10%	5%	

Conductors are replaced as load increases in areas

LOS ALAMOS TOWNSITE UNDERGROUND CABLE INSTALLATIONS (FEET)				
PROJECT SUBDIVISION OR AREA	1 PHASE PRIMARY CABLE	3 PHASE PRIMARY CABLE	1 PHASE SECONDARY CABLE	YEAR INSTALLED
EASTERN AREA WEST OF CANYON ROAD	2821		11978	1978
TIMBER RIDGE, LOMA VISTA, RIDGEPARK, OPENNHEIMER	9724	17088	9506	1975-80
WESTERN AREA	9045	11349	20596	1980
RIDGEWAY, UPPER SANDIA, UPPER TRINITY, UPPER FAIRWAY	5447	16242	12009	2004
PONDEROSA ESTATES	7179	6828	5996	1992
LOS PUEBLOS NAVAJO	11079		20015	1978
BROADVIEW BIG ROCK LOOP LA MESA	25160	12813	23015	1980-90
LOMA LINDA	2410		4988	1980
QUEMAZON	31705	30570	23444	2001-3
NC1 NC2 BURNED AREA	37858	87063	53776	2004-5
DEER TRAIL	2406		1571	2000
TRINITY - DP ROAD TO 20TH		30972		2013
DEL NORTE DEL SOL SUBDIVISIONS	15495		13740	2006
ENTRADA PAJARITO CLIFFS		21792		2012-16
RIM ROAD QUARTZ	4044		9187	2018
SAN IDELFONSO TSANKAWI	11497	40149	12229	2014
EAST ROAD AIRPORT TO ENTRADA		18360		2017
NM502 PROJECT TEWA TO CENTRAL AND TRINITY	5200	12100		2020
DP ROAD PHASE 1	1100	5000		2021
CANYON ROAD NM502 TO 15TH	2821	9832		2006
DIAMOND DRIVE		32760		2007-9

137,185’ PRIMARY UG CABLE INSTALLED PRIOR TO 2000 - 25% OF TOTAL
400,724’ PRIMARY UG CABLE INSTALLED AFTER 2000 - 75% OF TOTAL

TOWNSITE CONTAINS 77% OF UG CABLE COUNTY WIDE

WHITE ROCK UNDERGROUND CABLE INSTALLATIONS (FEET)

PROJECT SUBDIVISION OR AREA	1 PHASE PRIMARY CABLE	3 PHASE PRIMARY CABLE	1 PHASE SECONDARY CABLE	YEAR INSTALLED
PINION TRAILS	10011		5697	2003-06
EL MIRADOR	6500	13500	7200	2019-21
LA SENDA PIEDRA LOOP	34666			1970
LA VIST, SIERRA VISTA, PINION	15462		10669	1970-76
RIDGECREST, HASTA LA VISTA	16754		11954	1970
ARAGON TO MEADOW LANE	46661	16422	41280	1970-80

129,965' OF UG PRIMARY CABLE INSTALLED PRIOR TO 2000 - 81% OF TOTAL
30,011' OF UG PRIMARY CABLE INSTALLED AFTER 2000 - 19% OF TOTAL

WHITE ROCK CONTAINS 23% OF UNDERGROUND CABLE COUNTY WIDE

System Reliability

- **Systemic:**

  Overhead and Underground Failures

- **Non-Systemic:**

  Third Party Damage (Human Caused)

  Animals

  Weather

  Trees

  Unknown

SAIDI = SYSTEM AVERAGE INTERUPTION DURATION INDEX

The standard for measurement of system reliability according to IEEE And APPA. Our benchmark for reliability is 60 minutes.

OUTAGES BY CAUSE

2/14/2022	Utilites	18	HUMAN	9:34	9:49	0:15	213
7/30/2021	Utilites	WR1	OH Failure	16:50	19:15	2:25	1586
11/29/2021	Utilites	16	OH Failure	3:59	4:55	0:56	17
2/24/2022	Utilites	16	OH Failure	4:34	4:55	0:21	22
6/26/2022	Utilites	13	OH Failure	22:50	2:00	3:10	15
6/27/2022	Utilites	ELK RIDGE	OH Failure	14:45	15:10	0:25	20
10/22/2021	Utilites	TOWNSITE	TA3 SOURCE	7:42	9:50	2:08	4249
7/10/2021	Utilites	WR1	TREE	22:30	0:00	1:30	10
9/29/2021	Utilites	16	TREE	19:45	23:40	3:55	5
3/22/2022	Utilites	16	TREE	21:30	0:00	2:30	6
3/22/2022	Utilites	16	TREE	0:00	8:00	8:00	6
3/22/2022	Utilites	13,SKI HILL	TREE	20:00	0:00	4:00	35
3/22/2022	Utilites	13,SKI HILL	TREE	0:00	11:40	11:40	35
7/6/2021	Utilites	WR2	Unknown	10:45	11:45	1:00	25
7/10/2021	Utilites	14	Unknown	11:30	15:00	14:30	3
7/17/2021	Utilites	WR2	Unknown	12:30	14:30	2:00	16
10/2/2021	Utilites	14	UNKNOWN	23:30	0:00	0:30	539
10/2/2021	Utilities	14	UNKNOWN	0:00	1:00	1:00	539
5/10/2022	Utilites	WR2	Unknown	18:00	18:30	0:30	7
7/18/2021	Utilites	13	URD Failure	22:30	0:00	1:30	13
7/19/2021	Utilites	13	URD Failure	0:00	5:00	5:00	13
7/22/2021	Utilites	13	URD Failure	18:30	19:10	0:40	5
8/25/2021	Utilites	WR1	URD Failure	16:30	18:30	2:00	20
9/26/2021	Utilites	14	URD Failure	4:45	11:00	6:15	5
10/6/2021	Utilites	16	URD Failure	9:00	12:30	3:30	41
10/13/2021	Utilites	16	URD Failure	17:00	21:00	4:00	50
10/18/2021	Utilites	16	URD Failure	10:20	11:20	1:00	55
10/19/2021	Utilites	14	URD Failure	2:23	6:00	3:37	19
10/25/2021	Utilites	15	URD Failure	2:50	3:50	1:00	1564
10/25/2021	Utilites	15	URD Failure	2:50	3:50	1:00	47
12/22/2021	Utilites	13	URD Failure	6:30	8:40	2:10	1655
12/28/2021	Utilites	17	URD Failure	1:30	2:45	1:15	57
6/18/2022	Utilites	15	URD Failure	15:15	20:00	4:45	1564
6/18/2022	Utilites	WR2	URD Failure	18:30	23:30	5:00	25
6/22/2022	Utilites	17	URD Failure	9:00	11:00	2:00	2
6/27/2022	Utilites	15	URD Failure	8:15	13:30	5:15	60
12/15/2021	Utilites	14,17,18	WEATHER	6:30	8:30	2:00	2594
12/15/2021	Utilites	13	WEATHER	6:30	9:20	2:50	1655
12/15/2021	Utilites	TOWNSITE	WEATHER	15:23	15:32	0:09	4249
12/15/2021	Utilites	13,SKI HILL	WEATHER	6:30	16:43	10:13	35
1/1/2022	Utilites	16	WEATHER	16:50	17:10	0:20	1842

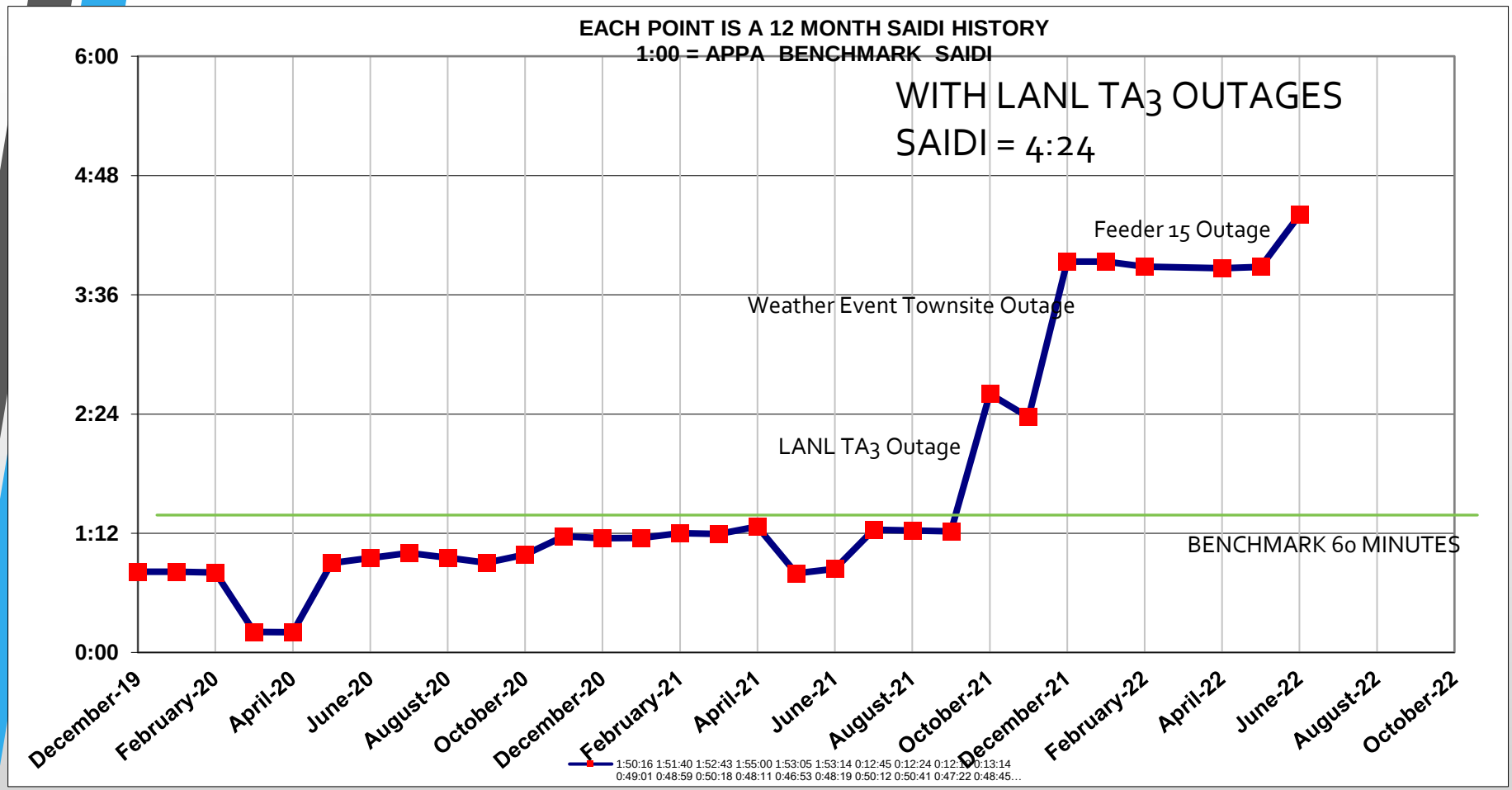
The reliability of the system is good. The major events that caused the most outage durations have been caused underground failures and weather events.

The multiple projects completed over the last decade have been focused on the three-phase primary backbone of the electric distribution system, both overhead and underground. The addition of the new Los Alamos Switch Station will further the reliability and redundancy of the system.

The current focus is on replacing the direct bury residential infrastructure in conduit.

Improvements to the electric distribution system are needed to meet DPU's goal of providing safe and reliable utility services.

SYSTEM RELIABILITY FY20 TO FY23



- **SAIDI – System Average Interruption Duration Index**

  A measure of outage time per customer if all customers were out at the same time (hours per year)

  $$SAIDI = \frac{\text{(Sum of all customer outage durations)}}{\text{(Total number of customers served)}}$$

PRIORITY LIST PROJECTS

CIRCUIT-PRIORITY-RANK	DESCRIPTION
13-1-1	REPLACE SWITCHES SC1305A, SC1309 AND SC1309A
13-1-2	NEED TO REPLACE TRANSFORMERS 725 AND 726
14-1-1	REPLACE 15TH AND IRIS SWITCH SC1401A
14-1-2	REPLACE YMCA SWITCH SC1401A2
15-1-1	CHANGE OUT POLES AT ARKANSAS 3091,3093,3095,3098,3087,3095
15-1-2	REPLACE URD PRIMARY LINE FROM SYCAMORE TO PUEBLO COMPLEX
16-1-1	INSTALL PRIMARY J-BOXES AT 897 & 921 ESTATES DR.
16-1-2	REPLACE PRIMARY CABLE IN LA MESA RRAILER PARK
17-1-1	REPLACE POLE #6152
17-1-2	REPLACE POLE #6154
17-1-2	REPLACE POLE 6137
17-1-3	REPLACE POLE #6138
17-1-4	REPLACE POLE # 6143
17-1-5	REPLACE POLE #6144
17-1-6	REPLACE POLE #6034
17-1-7	REPLACE POLE #6011
17-1-8	REPLACE POLE #6002
17-1-9	REPLACE POLE #6037
18-1-1	REPLACE SWITCH SC1803
18-1-2	INSTALL TRANSFORMER PAD AT MERRICK -
18-1-3	REPLACE OPEN DELTA TRANSFORMERS AT DP ROAD
18-1-4	REMOVE TRANSFORMER 1101 FROM MAIN TIE TO 18 AT DP ROAD
EA4-1-1	REPLACE MULTIPLE POLES AND CROSSARMS
WR1-1-1	REPLACE 4000' 1-PHASE PRIMARY: CHERYL CT,CONNIE
WR1-1-2	REPLACE 4 PADMOUNT SWITCHES ON ARAGON AVE. WR1-3,WR3-2,WR3-3,WR3-4,WR3-5,WR3-6
WR1-1-3	CHANGE OUT TRANSFORMER P3631 AT DNCU MALL
WR2-1-1	CONDUCTOR REPLACEMENT LA SENDA AND PIEDRA LOOP
WR2-1-2	REPLACE CONDUCTOR VALLE DEL SOL

Future Budget

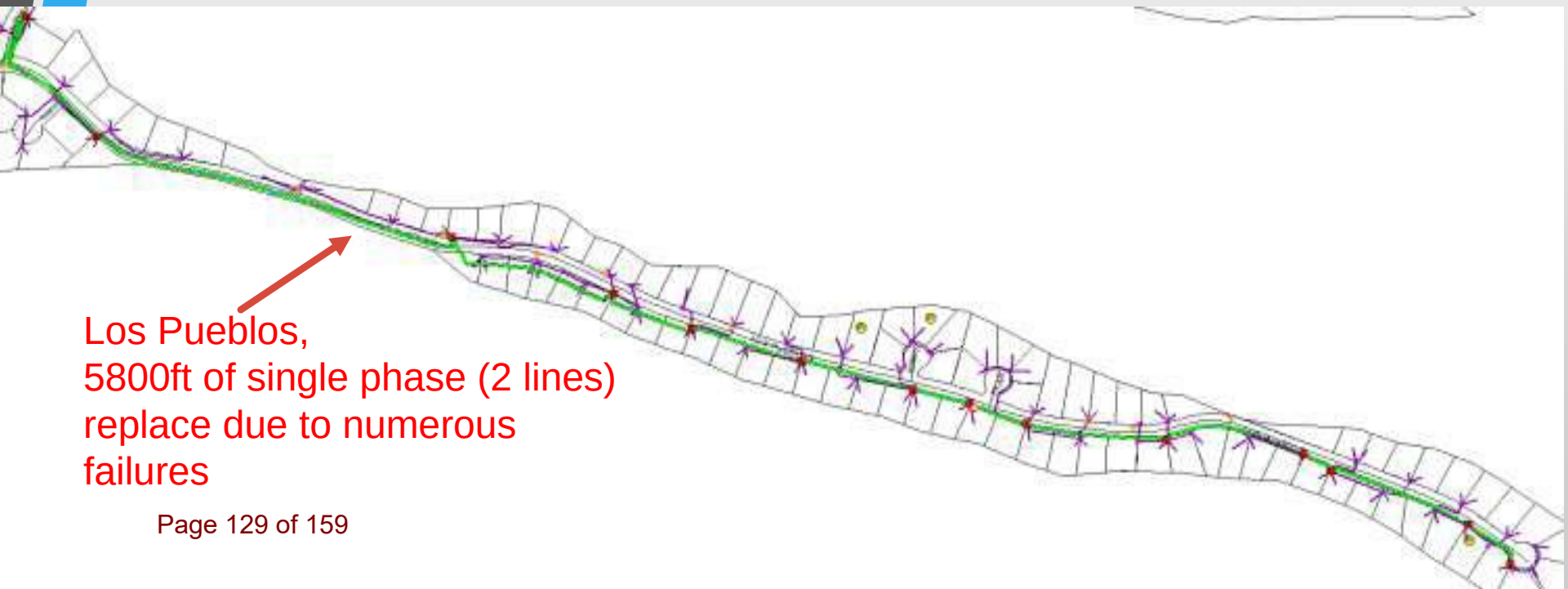
The electric distribution system will require the replacement of direct buried and old conductors. The assessment provided, identifies the need for $16 million over the next 14-year period. This includes the replacement of the EA-4 line which supplies primary power to the townsite water well system.

Major UG issues to contend with in the future\ New Rate Case Study in the near future

■ **Underground System**

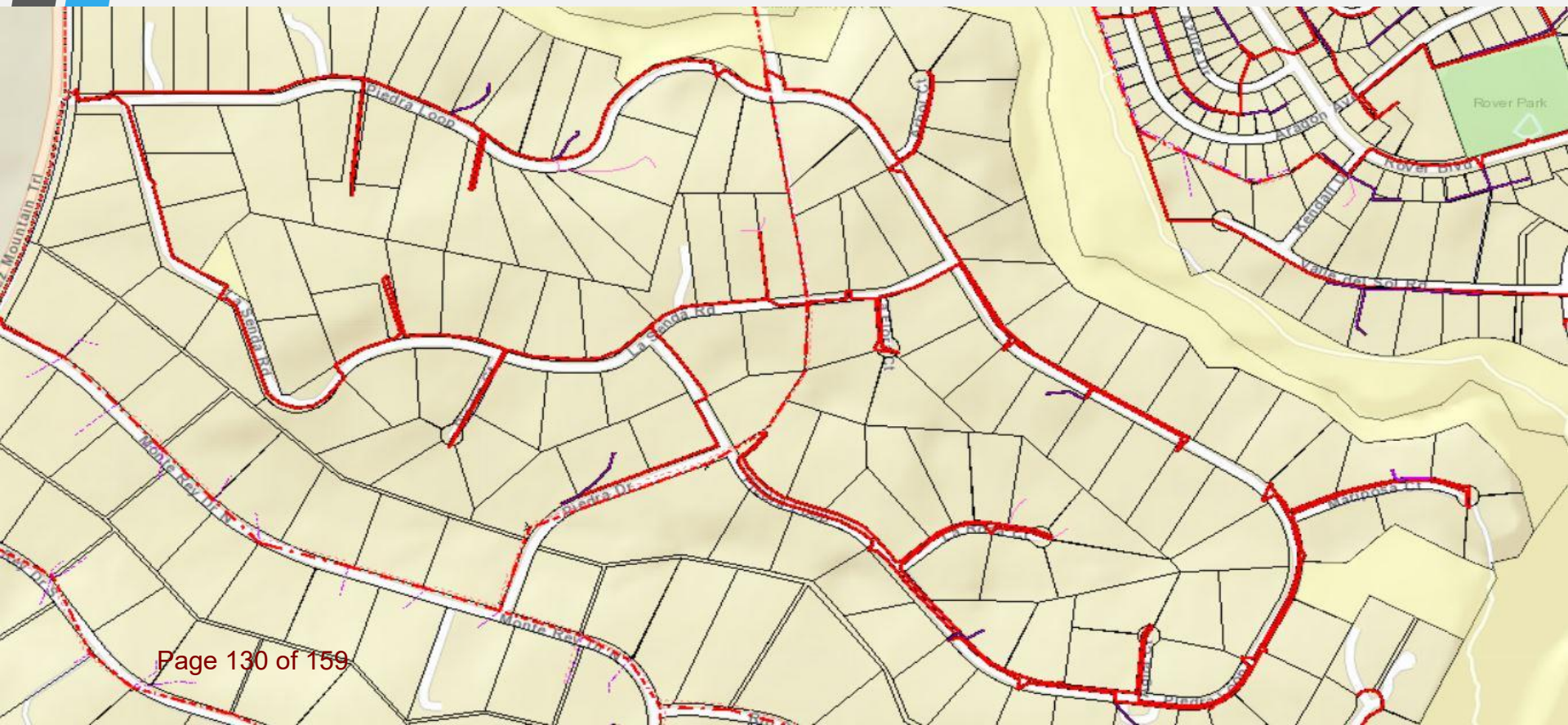
- Need to have the project funds to continue with URD replacement projects for SEGMENTS of the grid that we know will fail or have failed several times;

- The Los Pueblos, Navajo and Totavi power line will need to be replaced sometime in the near future**; costs close to 1.4 million dollars**



Major UG issues to contend with in the future

The Pajarito Acres and La Senda underground electric conductors Are old and direct buried. The area has had many failures and is in need Of replacement. The area is generally basalt with difficult digging conditions. The replacement of these conductors will take several years and should be Initiated next year. Costs will be **over two million dollars** for the entire area Installation of new conduit and conductors.

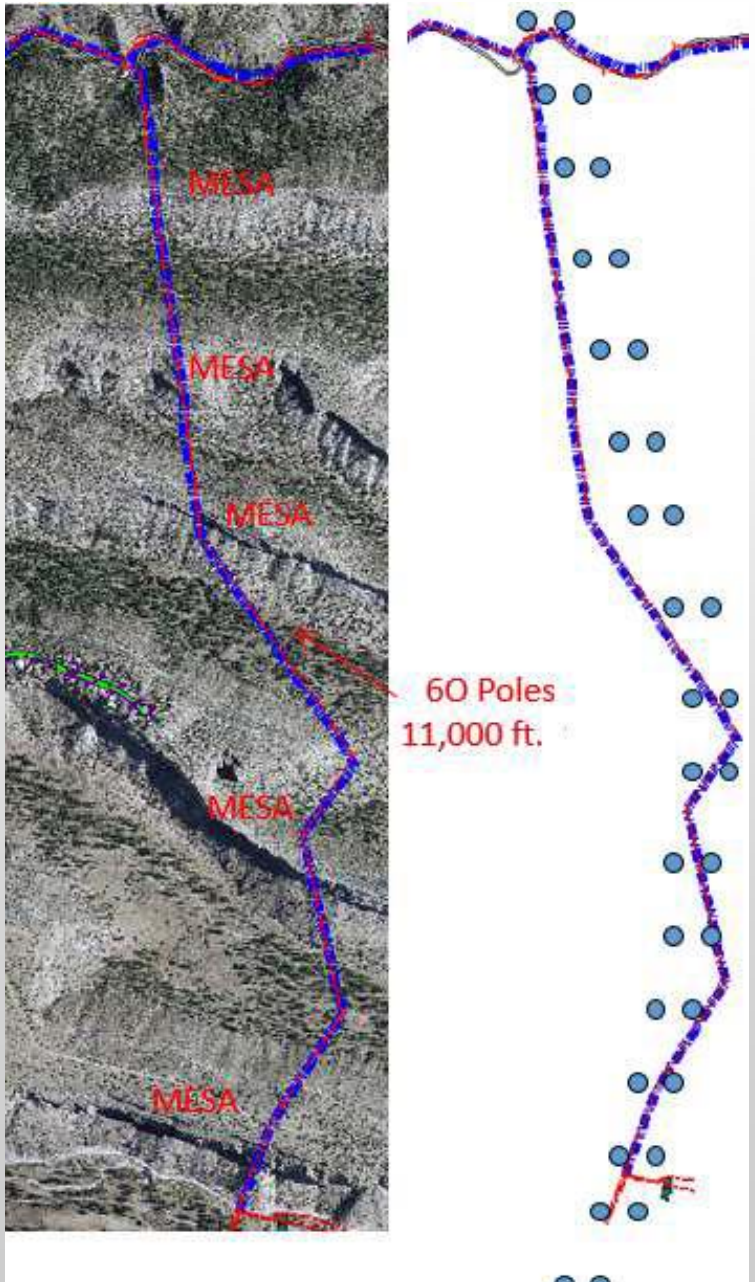


Major OH issues to contend with in the future

Overhead System
EA4 Feeder Replacement Project between PCS and Rendija Canyon **may cost over $2 Million.**

This project could be split into smaller projects; for example, start with the Pueblo Canyon Crossing first.

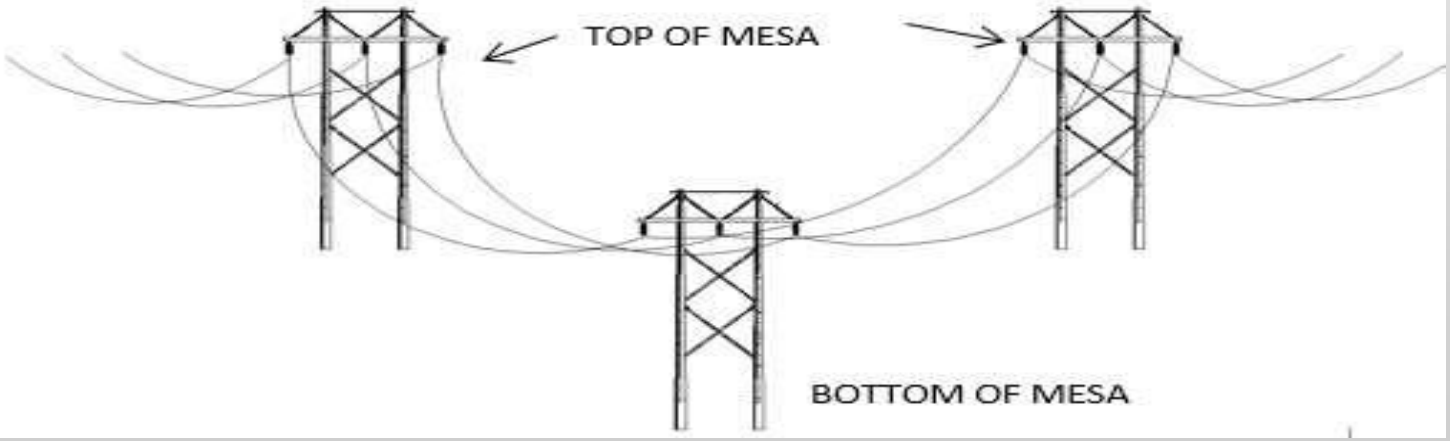
The first phase should begin within 3 years;



Major OH issues to contend with in the future

- There are presently 60 pole structures
- Most are 2 or 3 pole H-type deadends (expensive)

- Proposed Design (< 20 pole H structures)
- Utilize transmission types structures to span the canyons



QUESTIONS?

Agenda No.:	5.A.
Index (Council Goals):	* 2022 Council Goal - Investing in Infrastructure; DPU FY2022 - 1.0 Provide Safe and Reliable Utility Services; DPU FY2022 - 3.0 Be a Customer Service Oriented Organization that is Communicative, Efficient, and Transparent
Presenters:	Deputy Utilities Manager - Finance Heather Garcia, Deputy Utilities Manager - Finance
Legislative File:	**CO0643-22-b**

Title
Incorporated County of Los Alamos Code Ordinance No. 02-329; An Ordinance Amending Chapter 40, Article III, Sections 40-151, and 40-152 of the Code of the Incorporated County of Los Alamos Pertaining to Gas Service Rates.

Recommended Action
I move that the Board of Public Utilities approve Incorporated County of Los Alamos Code Ordinance No. 02-329; An Ordinance Amending Chapter 40, Article III, Sections 40-151, and 40-152 of the Code of the Incorporated County of Los Alamos Pertaining to Gas Service Rates and forward to Council for adoption.

Utilities Manager Recommendation
The Utilities Manager recommends that the Board of Public Utilities approve the motion as presented.

Body
The ten-year forecast for the gas utility presented with the FY2023 budget included a series of rate increases to generate revenues needed for current operations and to build cash reserves necessary for future infrastructure needs. Rate increases proposed in the Gas fund were three consecutive years of eight percent increases, followed by five percent in FY 2026. The Gas Rate schedule has been unaltered since 2016, in which the commodity rate was decreased from $0.29 cents per therm to $0.23 cents per therm. Prior to this change, in 2013, the commodity rate was decreased from $0.55 cents per therm. The gas rates for service charges have not been changed since 2009. It the latest iterations of analysis, large increases to costs due to inflation and supply chain shortages have greatly impacted fund balances. Staff feels confident the short to mid-term rate trajectory proposed in the FY2023 budget are appropriate for the four-year horizon at least and is thus proposing a multi-year rate adjustment at this time. Four years projected rate increases are included in the ordinance proposed.

These rate changes also affect the County/School customer's fixed commodity rates from $0.20 cents to $0.22. DPU does not pay profit transfer for on revenues generated from these

customers. The profit transfer is calculated as five percent of revenues collected from residential, multifamily, and commercial customers. There is also a considerable savings in administrative overheads for County/Schools accounts. County accounts make up 0.5 percent of total customers and schools' 0.3 percent. Combined these customers make up 6.9 percent of gas consumption annually. As a result, there are less costs for billing processes and printing, credit card fees, and collection activities.

The advantages to implementing the multi-year proposal are numerous. Importantly, it provides for the rate adjustments to scheduled and effective with advanced notice to customers. It allows our customers to plan and budget for future anticipated utilities costs, rather than experience the "rate shock" of unanticipated rate increases on a more frequent basis. Without the multi-year approach, that is difficult to accomplish, and complicates fiscal planning needs from year to year. Doing a multi-year incremental rate adjustment also allows planned revenues to match the timing of planned expenditures, rather than accumulating excess cash early on for expenditure in a later period. This also allows for the advanced planning of rates in the billing system, helping staff ensure billing accuracy when the new rates become effective. Enacting a multi-year ordinance in no way limits the Board from later proposing another ordinance to change rates, either up or down, during that four-year period if operational experience necessitates such action. Should it become apparent that the rates proposed are either not achieving the revenue requirements of the systems, or are exceeding them, there is no reason why they could not be adjusted in the interim. This multi-year proposal simply provides for seamless and timely implementation of the rate projections should future results tie within reasonable variation to budget projections.

Included in the presentation attached as Attachment B are the rate comparisons with neighboring and similar communities, costs as a percentage of median household income, and long-term utilities costs projections normally presented with proposed rate adjustments. These continue to demonstrate that even with the challenges of our complicated system and mountainous terrain, consumer costs for gas services remain competitive and reasonable for our community. Also, included in the presentation are frequently asked questions and answers that have been posted for the public in Attachment F.

The proposed rates should restore cash flow to an acceptable level within the projected time frame in the gas system. This plan will provide adequate funding for necessary repairs and replacements and continuing operations and provide for movement toward our long-term cash reserve goals. Once achieved, it is anticipated that rate adjustments simply to account for inflation will suffice for the foreseeable future.

Alternatives

As noted above, rate increases are going to be needed to fund necessary operations and replacement of infrastructure through rates. Other scenarios could be considered with more significant rate increases being implemented to fund more rapid system upgrades. If no action is taken, we would have to continue to curtail maintenance and replacements and system reliability will suffer.

Fiscal and Staff Impact

The proposed increases are expected to generate, in Gas Distribution, $229,280; $391,535; $568,830; and $662,083 for FYs 23, 24, 25, and 26 respectively.

Attachments

A - Code Ordinance 02-329 - Gas Rates
B - Rate Comparisons to Neighboring Communities
C - Revenue, Expenses, and Cash Balances Graphs FY2023 through FY2032
D - Summary of Proposed Gas Rate Increases
E - Publication Notice
F - Frequently Asked Questions
G - 2022 Gas Rate Increase Presentation

INCORPORATED COUNTY OF LOS ALAMOS CODE ORDINANCE NO. 02-329

AN ORDINANCE AMENDING CHAPTER 40, ARTICLE III, SECTIONS 40-151 AND 40-152 OF THE CODE OF THE INCORPORATED COUNTY OF LOS ALAMOS PERTAINING TO THE GAS SERVICE RATE SCHEDULE

WHEREAS, the Incorporated County of Los Alamos ("County") is an incorporated county of the State of New Mexico as provided in Section 5, Article 10 of the New Mexico Constitution; and pursuant to Section 5, Article 10 of the State Constitution, is also granted all powers of a municipality; and

WHEREAS, pursuant to Article V of the County Charter, there is a Department of Public Utilities ("Department") charged with the duty to operate a County owned electric, gas, water and sewer systems; and

WHEREAS, Section 504 of the County Charter requires that the Department be operated on a compensatory basis, with rates being just, reasonable, and comparable to those in neighboring communities, and uniform for all consumers of the same class; and

WHEREAS, the Department and Utilities Manager have identified the need to increase gas rates to meet the projected revenue requirements of the Department; and

WHEREAS, pursuant to County Code Section 203.1(d) any change in County utility rates shall be done by ordinance; and

WHEREAS, pursuant to Section 4.6(a) of the *Board of Public Utilities Procedural Rules* (ed. 02/19/2020), the Utilities Manager is responsible for preparing and presenting proposed utility rate ordinances to the Board of Public Utilities ("BPU"); and

WHEREAS, pursuant to Section 504 of the County Charter, the rates to be paid for utility services shall then be proposed by the BPU to the County Council and shall become effective on the date of adoption by Council; and

WHEREAS, pursuant to Section 4.6(b) of the *Board of Public Utilities Procedural Rules*, the proposed rates shall be presented at least one (1) month prior to the BPU public hearing on a final proposed utility rate ordinance and

WHEREAS, the Department and Utilities Manager shall introduce the draft ordinance to the BPU and present the budget and operational reasons for the proposed rate ordinance; and

WHEREAS, the Utilities Manager presented the proposed rate increase for natural gas to the BPU on June 15, 2022; and

WHEREAS, the Utilities Manager, after receiving comments from the BPU, then presented the final rate ordinance to BPU on July 20, 2022;

WHEREAS, the BPU [accepted and recommended/accepted and modified, etc.] the final

gas rate ordinance and recommended forwarding it to Council for adoption; and

WHEREAS, on August 9, 2022 the County Council, pursuant to Section 203.2.1 of the County Charter introduced the proposed gas rate ordinance; and

WHEREAS, on August 30, 2022, the County Council, pursuant to Section 203.2.2 of the County Charter held a public hearing on the proposed gas rate ordinance.

NOW, THEREFORE, BE IT ORDAINED BY THE GOVERNING BODY OF THE INCORPORATED COUNTY OF LOS ALAMOSs:

Section 1. Section 40-151 of the Code of the Incorporated County of Los Alamos is amended to read, as follows:

Sec. 40-151. Gas rate schedules 7A and 7E.

(a) *Residential service schedule 7A.* The residential rate applies to customers in a single dwelling or in a single dwelling unit of a multiple dwelling or apartment for domestic purposes only.

(b) *General commercial and industrial service schedule 7E.* The commercial and industrial rate applies to customers for use in or in connection with any commercial, business or industrial activities, including multiple dwelling units where service for more than one unit is taken through a master meter, and to other customers not otherwise specifically falling within another class.

(c) *Service charge.*

(1) Per meter rated 250 CFH or less: $9.50 per month through September 30, 2022; $10.26 per month after September 30, 2022: $11.08 per month after September 30, 2023; $11.97 per month after September 30, 2024; $12.57 per month after September 30, 2025;

(2) Per meter rated more than 250 CFH: $28.50 per month through September 30, 2022; $30.78 after September 30, 2022; $33.24 per month after September 30, 2023; $35.90 per month after September 30, 2024; $37.70 per month after September 30, 2025.

(d) *Gas consumption charge.*

(1) The gas consumption charge for schedules 7A and 7E shall be made up of two components: fixed cost recovery and a variable cost of gas component. The fixed cost recovery shall be $0.23 per therm (one therm is equal to 100,000 British Thermal Units (BTU)) through September 30, 2022; $0.25 after September 30, 2022; $0.27 after September 30, 2023; $0.29 after September 30, 2024; $0.30 after September 30, 2025. The variable cost of gas rate shall be calculated each month based on the projected cost of gas for the billing month plus an adjustment for any prior over or under collection for gas purchases and/or gas transportation costs.

(2) The projected cost of gas shall be at the rate as stated on the San Juan Index or any recognized index that may replace the San Juan Index.

(3) Should the variable cost of gas exceed $0.99 per therm, the billed rate to consumers shall not reflect the cost of gas over that amount until the rate is approved by an ordinance of the council.

Section 2. Section 40-152 of the Code of the Incorporated County of Los Alamos is amended to read, as follows:

Sec. 40-152. Gas rate schedules 7L and 7N.

(a) *Applicability.*

(1) *Schedule 7L:* Interdepartmental service—Incorporated County of Los Alamos.

(2) *Schedule 7N:* Schools service—Los Alamos public schools.

(b) *Service charge.*

(1) Per meter rated 250 CFH or less: $9.50 per month through September 30, 2022; $10.26 per month after September 30, 2022: $11.08 per month after September 30, 2023; $11.97 per month after September 30, 2024; $12.57 per month after September 30, 2025;

(2) Per meter rated more than 250 CFH: $28.50 per month through September 30, 2022; $30.78 after September 30, 2022; $33.24 per month after September 30, 2023; $35.90 per month after September 30, 2024; $37.70 per month after September 30, 2025.

(c) *Gas consumption charge.*

(1) The gas consumption charge for schedules 7L and 7N shall be made up of two components: fixed cost recovery and a variable cost of gas component. The fixed cost recovery shall be $0.20 per therm (one therm is equal to 100,000 British Thermal Units (BTU)) through September 30, 2022; $0.22 after September 30, 2022; $0.24 after September 30, 2023; $0.26 after September 30, 2024; $0.27 after September 30, 2025. The variable cost of gas rate shall be calculated each month based on the projected cost of gas for the billing month plus an adjustment for any prior over or under collection for gas purchases and/or gas transportation costs.

(2) The projected cost of gas shall be at the rate as stated on the San Juan Index or any recognized index that may replace the San Juan Index.

(3) Should the variable cost of gas exceed $0.99 per therm the billed rate to consumers shall not reflect the cost of gas over that amount until the rate is approved by an ordinance of the council.

Section 3. **Effective Date.** This ordinance shall become effective upon adoption with the amended gas rates being applied for all billings on or after August 31, 2022.

Section 4. **Severability.** Should any section, paragraph, clause or provision of this ordinance, for any reason, be held to be invalid or unenforceable, the invalidity or unenforceability of such section, paragraph, clause or provision shall not affect any of the remaining provisions of this ordinance.

Section 5. **Repealer.** All ordinance or resolutions, or parts thereof, inconsistent herewith are hereby repealed only to the extent of such inconsistency. This repealer shall not be construed to revive any ordinance or resolution, or part thereof, heretofore repealed.

ADOPTED this 30th day of August 2022.

COUNCIL OF THE INCORPORATED COUNTY OF LOS ALAMOS

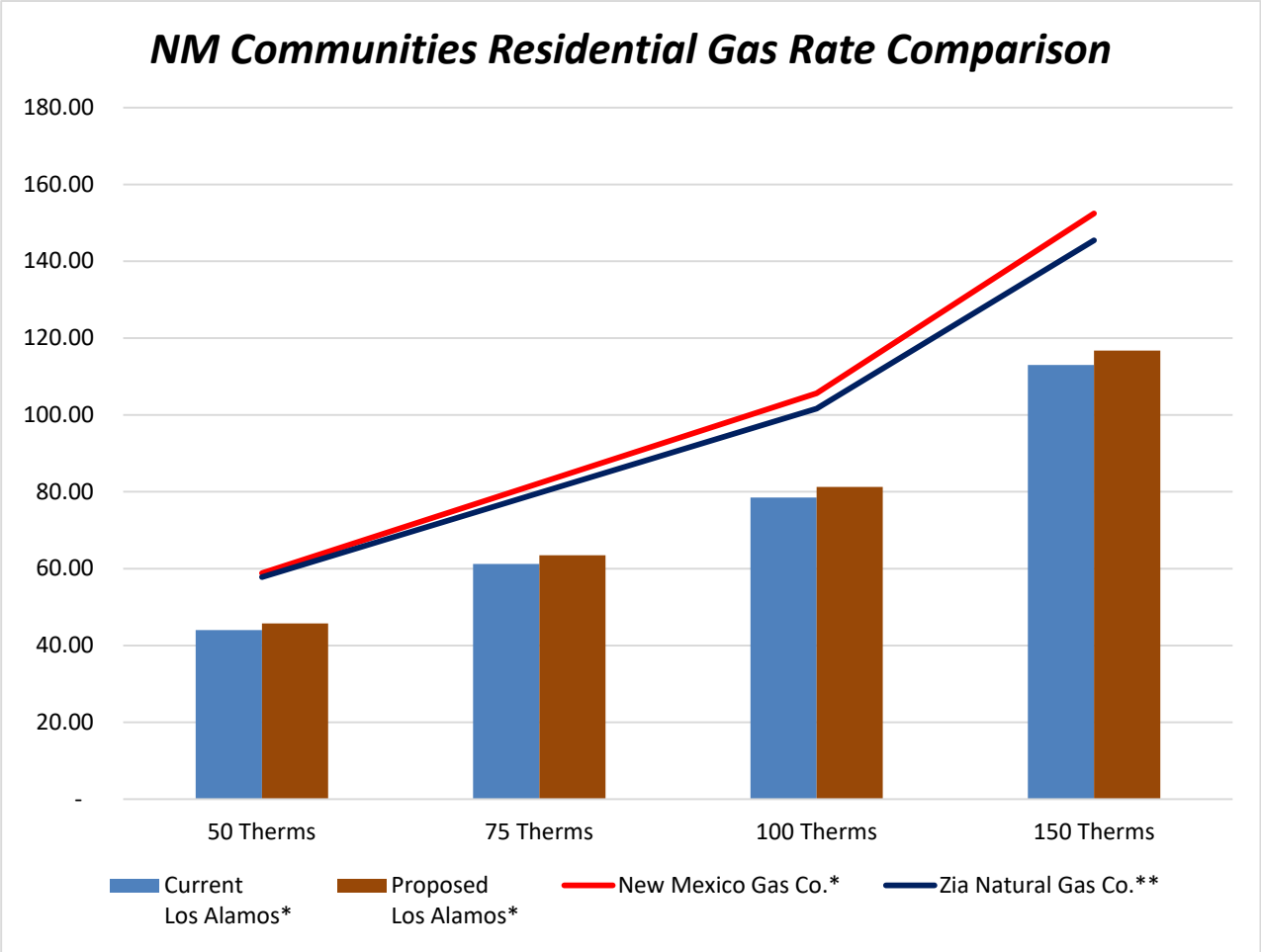
_____

Randall T. Ryti,
Council Chair

ATTEST: (SEAL)

_____

Naomi D. Maestas,
Los Alamos County Clerk

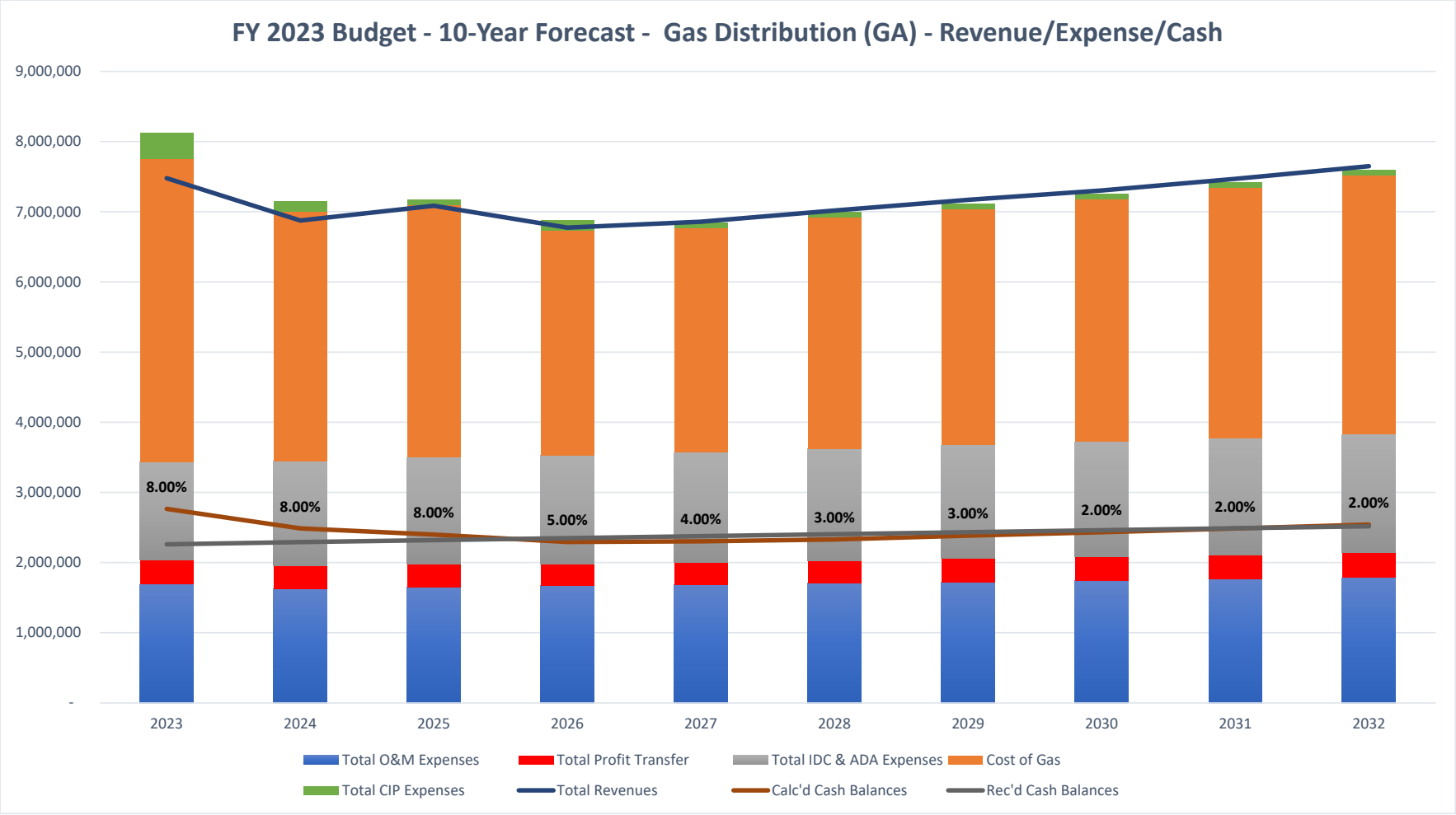


SAMPLE RESIDENTIAL BILL - Assuming Small Gas Meter

Monthly Usage	Current Los Alamos*	**Proposed Los Alamos***	New Mexico Gas Co.*	Zia Natural Gas Co.**
50 Therms	44.00	**45.76**	58.81	57.82
75 Therms	61.25	**63.51**	82.22	79.73
100 Therms	78.50	**81.26**	105.62	101.63
150 Therms	113.00	**116.76**	152.44	145.45

**Average of 12 months Cost of Gas Comodity Rate used.*

*** Average of all service areas used for comparison.*


FY 2023 Budget - 10-Year Forecast - Gas Distribution (GA) - Revenue/Expense/Cash
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
8.00%
8.00%
8.00%
5.00%
4.00%
3.00%
3.00%
2.00%
2.00%
2.00%
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
Total O&M Expenses
Total Profit Transfer
Total IDC & ADA Expenses
Cost of Gas
Total CIP Expenses
Total Revenues
Calc'd Cash Balances
Rec'd Cash Balances

Gas Rate Schedule 7-A, 7-E, 7-L, 7-N

		SERVICE CHG - SML METER	SERVICE CHG - LRG METER	COMMODITY
Residential	through 09/30/2022	$9.50	$28.50	$0.23
	After 09/30/2022	$10.26	$30.78	$0.25
	After 09/30/2023	$11.08	$33.24	$0.27
	After 09/30/2024	$11.97	$35.90	$0.29
	After 09/30/2025	$12.57	$37.70	$0.30
Commercial	through 09/30/2022	$9.50	$28.50	$0.23
	After 09/30/2022	$10.26	$30.78	$0.25
	After 09/30/2023	$11.08	$33.24	$0.27
	After 09/30/2024	$11.97	$35.90	$0.29
	After 09/30/2025	$12.57	$37.70	$0.30
County	through 09/30/2022	$9.50	$28.50	$0.20
	After 09/30/2022	$10.26	$30.78	$0.22
	After 09/30/2023	$11.08	$33.24	$0.24
	After 09/30/2024	$11.97	$35.90	$0.26
	After 09/30/2025	$12.57	$37.70	$0.27
School	through 09/30/2022	$9.50	$28.50	$0.20
	After 09/30/2022	$10.26	$30.78	$0.22
	After 09/30/2023	$11.08	$33.24	$0.24
	After 09/30/2024	$11.97	$35.90	$0.26
	After 09/30/2025	$12.57	$37.70	$0.27

NOTICE OF PUBLIC HEARING FOR INCORPORATED COUNTY OF LOS ALAMOS CODE ORDINANCE NO. 02-329 AN ORDINANCE AMENDING CHAPTER 40, ARTICLE III, SECTIONS 40-151 AND 40-152 OF THE CODE OF THE INCORPORATED COUNTY OF LOS ALAMOS PERTAINING TO THE GAS SERVICE RATE SCHEDULE

Notice is hereby given that the Board of Public Utilities (BPU), Incorporated County of Los Alamos, State of New Mexico, will hold a public hearing on July 20, 2022, at 5:30 p.m. via Zoom (https://ladpu.com/ratehearing). At this open meeting, the BPU will consider and receive public comment on Los Alamos County Code Ordinance No. 02-329. A full copy of the ordinance is available for inspection during regular business hours at the Department of Public Utilities at 1000 Central Avenue, Suite 130 or online at https://ladpu.com/Gas-Proposed. Supporting documents are available at https://ladpu.com/rates. Interested citizens are encouraged to attend this public hearing.

By: /s/ Cornell Wright, Board of Public Utilities Chair

Zoom Link https://us06web.zoom.us/j/85016571926 (or use the short URL listed above)

Webinar ID: 850 1657 1926

One tap mobile (US): +14086380968,,85016571926# or +16699006833,,85016571926#

Phone (US): +1 408 638 0968 or +1 669 900 6833 or +1 253 215 8782 or +1 346 248 7799 or +1 312 626 6799 or +1 646 876 9923 or +1 301 715 8592

NOW, THEREFORE, BE IT ORDAINED BY THE GOVERNING BODY OF THE INCORPORATED COUNTY OF LOS ALAMOS:

Section 1. Section 40-151 of the Code of the Incorporated County of Los Alamos is amended to read, as follows:

Sec. 40-151. Gas rate schedules 7A and 7E.

(a) *Residential service schedule 7A.* The residential rate applies to customers in a single dwelling or in a single dwelling unit of a multiple dwelling or apartment for domestic purposes only.

(b) *General commercial and industrial service schedule 7E.* The commercial and industrial rate applies to customers for use in or in connection with any commercial, business or industrial activities, including multiple dwelling units where service for more than one unit is taken through a master meter, and to other customers not otherwise specifically falling within another class.

(c) *Service charge.*

(1) Per meter rated 250 CFH or less: $9.50 per month through September 30, 2022; $10.26 per month after September 30, 2022: $11.08 per month after September 30, 2023; $11.97 per month after September 30, 2024; $12.57 per month after September 30, 2025.

(2) Per meter rated more than 250 CFH: $28.50 per month through September 30, 2022; $30.78 after September 30, 2022; $33.24 per month after September 30, 2023; $35.90 per month after September 30, 2024; $37.70 per month after September 30, 2025.

(d) *Gas consumption charge*.

(1) The gas consumption charge for schedules 7A and 7E shall be made up of two components: fixed cost recovery and a variable cost of gas component. The fixed cost recovery shall be $0.23 per therm (one therm is equal to 100,000 British Thermal Units (BTU)) through September 30, 2022; $0.25 after September 30, 2022; $0.27 after September 30, 2023; $0.29 after September 30, 2024; $0.30 after September 30, 2025. The variable cost of gas rate shall be calculated each month based on the projected cost of gas for the billing month plus an adjustment for any prior over or under collection for gas purchases and/or gas transportation costs.

(2) The projected cost of gas shall be at the rate as stated on the San Juan Index or any recognized index that may replace the San Juan Index.

(3) Should the variable cost of gas exceed $0.99 per therm, the billed rate to consumers shall not reflect the cost of gas over that amount until the rate is approved by an ordinance of the council.

Section 2. Section 40-152 of the Code of the Incorporated County of Los Alamos is amended to read, as follows:

Sec. 40-152. Gas rate schedules 7L and 7N.

(a) *Applicability.*

(1) Schedule 7L: Interdepartmental service—Incorporated County of Los Alamos.

(2) Schedule 7N: Schools service—Los Alamos public schools.

(b) *Service charge.*

(1) Per meter rated 250 CFH or less: $9.50 per month through September 30, 2022; $10.26 per month after September 30, 2022: $11.08 per month after September 30, 2023; $11.97 per month after September 30, 2024; $12.57 per month after September 30, 2025.

(2) Per meter rated more than 250 CFH: $28.50 per month through September 30, 2022; $30.78 after September 30, 2022; $33.24 per month after September 30, 2023; $35.90 per month after September 30, 2024; $37.70 per month after September 30, 2025.

(c) *Gas consumption charge.*

(1) The gas consumption charge for schedules 7L and 7N shall be made up of two components: fixed cost recovery and a variable cost of gas component. The fixed cost recovery shall be $0.20 per therm (one therm is equal to 100,000 British Thermal Units (BTU)) through September 30, 2022; $0.22 after September 30, 2022; $0.24 after September 30, 2023; $0.26 after September 30, 2024; $0.27 after September 30, 2025. The variable cost of gas rate shall be calculated each month based on the projected cost of gas for the billing month plus an adjustment for any prior over or under collection for gas purchases and/or gas transportation costs.

(2) The projected cost of gas shall be at the rate as stated on the San Juan Index or any recognized index that may replace the San Juan Index.

(3) Should the variable cost of gas exceed $0.99 per therm the billed rate to consumers shall not reflect the cost of gas over that amount until the rate is approved by an ordinance of the council.

Section 3. Effective Date. This ordinance shall become effective upon adoption with the amended rates being applied at the next billing following the effective date of the ordinance.

LA DAILY POST
Publication Date: June 20, 2022, and July 7, 2022

Frequently Asked Questions
Proposed Gas Rate Increase

7/8/2022

1. How much is the DPU proposing to increase the gas rate?

The Department of Public Utilities is proposing gas rate increases covering a four-year period to be approved by the Board of Public Utilities and adopted by the County Council. The increases are for the fixed portion of the commodity rate and the meter service charges.

GAS SERVICE CHARGE		
	Small Meter	Large Meter
Current	9.50	28.50
10/1/2022	10.26	30.78
10/1/2023	11.08	33.24
10/1/2024	11.97	35.90
10/1/2025	12.57	37.70

FIXED CONSUMPTION RATE/THERM		
	Residential & Commercial	County & Schools
Current	0.23	0.20
10/1/2022	0.25	0.22
10/1/2023	0.27	0.24
10/1/2024	0.29	0.26
10/1/2025	0.30	0.27

2. Why do we need these gas rate increases and what do they cover?

The proposed increases are intended to generate revenues needed for current operations and to build cash reserves necessary for future infrastructure needs. Large increases to costs due to inflation and supply chain shortages have negatively impacted current gas fund balances.

3. Where can I find the draft ordinance?

The draft ordinance is included in this PDF starting on page 6. Current rates are always available on the DPU website at https://ladpu.com/rates, where the draft ordinance has also been posted under the folder "Proposed & Pending Rate Changes."

Administrative Office
1000 Central Avenue, Suite 130
Los Alamos, NM 87544
P 505.662.8333 F 505.662.8005

customercare@lacnm.us
ladpu.com/dpu

4. What is the process for raising the gas rates?

The BPU will hold a public hearing on July 20th at 5:30 pm through the online platform Zoom at this link: https://ladpu.com/ratehearing. If the BPU approves the ordinance, Council will then hold a public hearing to consider adoption at the August 30th County Council meeting.

5. When will these rates take effect?

The proposed ordinance states that the increases will go into effect annually on October 1st.

6. Are the BPU and County Council locked into these rates for the next four years?

No. Rates can always be modified if the BPU and County Council determine it is appropriate and approve and adopt a new rate ordinance.

7. How often are gas rates increased? Didn't this happen recently?

Gas rates have not been increased since before the current pass-through rate structure was adopted in 2013. The prior commodity rate was $0.55/therm for residential customers. The original fixed portion of the pass-through commodity rate was $0.29/therm. That rate was reduced to $0.23/therm in 2016. Gas meter service charges have not changed since 2009.

8. What is the pass-through gas rate structure?

DPU has included a "pass-through" cost of natural gas in its rate structure since the end of 2013. This model includes a monthly service fee and a commodity (or consumption) rate that is made up of two components: 1) a fixed cost recovery charge and 2) a variable cost of gas charge. The commodity rate is charged per therm consumed. The fixed cost recovery portion of the commodity rate will increase if the proposed gas rate increases are adopted. This portion of the rate has never been increased and is covers set natural gas distribution maintenance and operation expenses. In 2016, it was reduced from $0.29/therm to $0.23/therm for residential customers. If approved, the fixed portion will return to the original 2013 amount of $0.29/therm in October 2024. The final increase under this proposal will take place a year later, raising the fixed portion to $0.30/therm.

DPU's actual cost to purchase the natural gas commodity is passed directly to the customer in the variable portion of the commodity rate. This cost is calculated each month based on the San Juan Index and then adjusted based on the actual cost from the prior month. The benefit of this approach for customers is that DPU does not need to maintain a substantial rate stabilization fund to absorb

volatile, fluctuating gas prices. Each month DPU posts the new variable cost of gas portion of the commodity rate online at ladpu.com/DPUGasRateSchedule .

9. How will these rates impact my bill?

For residential customers using 75 therms per month and assuming the variable portion of the pass-through commodity rate averages $0.46 monthly, the impact is shown in the table below. About 65% of DPU's residential customers use no more than 75 therms per month on average.

	Current	Oct. 01, 2022	Oct. 01, 2023	Oct. 01, 2024	Oct. 01, 2025
Monthly Svc Fee	$9.50	$10.26	$11.08	$11.97	$12.57
Fixed Commodity Rate	$17.25	$18.75	$20.25	$21.75	$22.50
Projected $0.46 Variable Rate*	$34.50	$34.50	$34.50	$34.50	$34.50
Total Bill	**$61.25**	**$63.51**	**$65.83**	**$68.22**	**$69.57**

**Average of variable rate from June 2021 through May 2022*

10. What if these increases are not approved?

If increases are not approved, DPU will have to curtail maintenance and replacements. This curtailment will impact system reliability and eventually create a need for a rate increase that is potentially urgent and more substantial.

11. How can I reduce my consumption to lower the impact of this rate increase?

There are many ways to use less natural gas and therefore lower your bills.

1. Make sure your furnace and water heater are maintained. These systems are likely to become less energy efficient over time but you can maintain some efficiency by checking them regularly. Replace leaky or worn-out parts to prevent losing energy and running up your gas bill.

2. Make sure your vents allow the warm air produced by your furnace to flow freely. Don't block vents with furniture or appliances.

3. Make sure your windows and doors are sealed with caulk or weatherstripping. You can further insulate by covering windows with curtains or blinds when it's cold outside. Insulate your water heater as well.

4. Turning the thermostat down a couple degrees can reduce your consumption and lower your bills. If it's uncomfortable, consider lowering the thermostat when you're away from home or only at night.

5. Turn your water heater down. You might find that it's set higher than it needs to be.

6. Use your fireplace less often. While you can sit in front of a fire to stay warm and cozy, much of the heat it generates goes straight up the chimney. As it escapes, the vacuum it leaves behind draws cold air in through cracks or weak spots in your insulation. Once that happens, your heating system is likely to kick into overdrive to compensate for the loss of warmth in the house.

12. Is there any assistance for individuals on fixed incomes?

DPU has a Utility Assistance Program to aid qualified low-income residential families. A copy of the UAP brochure can be downloaded at: https://ladpu.com/UAPBrochure.

Funded by DPU customer donations, the program is available to:

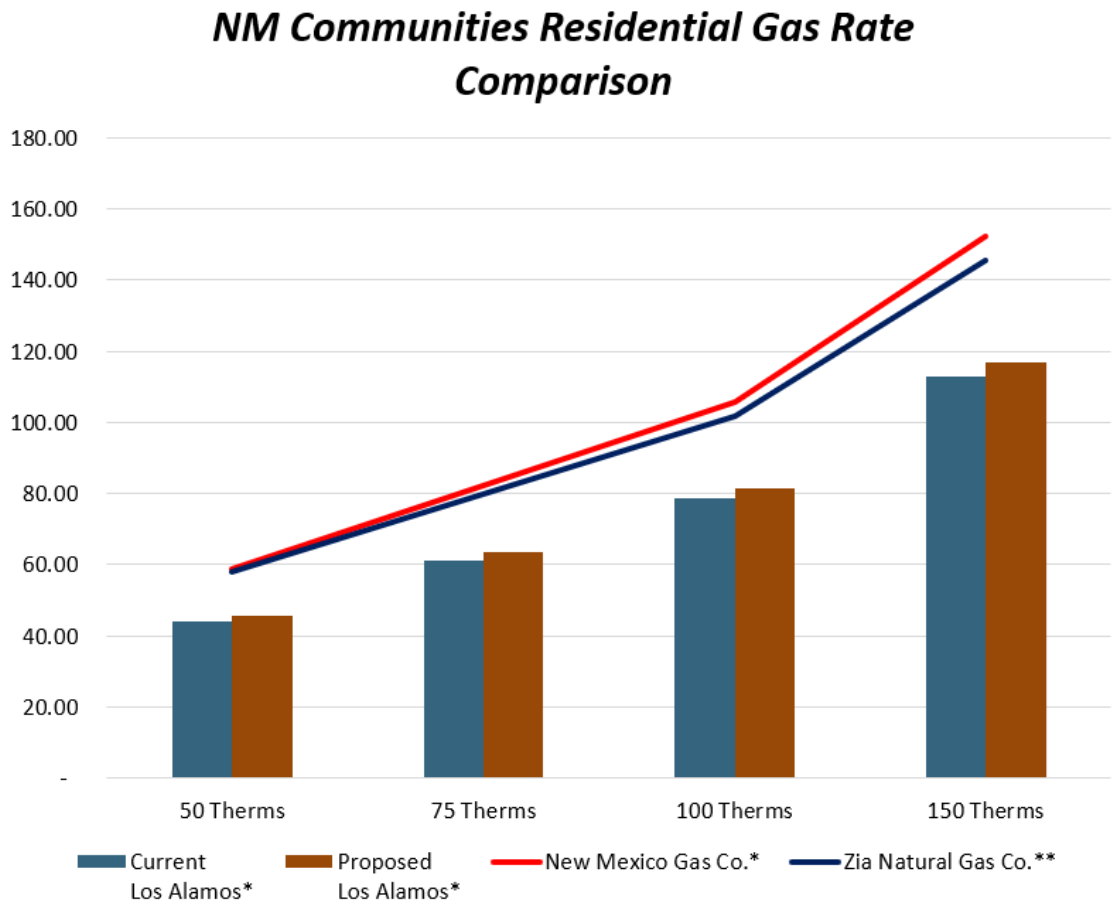
1. Qualifying low-income customers for the months of October through March
2. Qualifying low-income customers over age 65, year-round
3. Customers who demonstrate a financial hardship due to unforeseen circumstances may qualify for a single, lump sum credit.

Customers can contact the Customer Care Center to apply or to donate to the program – 505 662 8333 or CustomerCare@lacnm.us.

Other programs available to assist customers' utility bills are: LA Cares, 505 661 8105, or Self-help, Inc, 505 662 4666.

The State of New Mexico offers the NM Low Income Energy Assistance Program (LIHEAP) to assist with energy bills, 505 753 2271.

13. How do these rates compare with other communities?



SAMPLE RESIDENTIAL BILL - Assuming Small Gas Meter				
Monthly Usage	Current Los Alamos*	**Proposed Los Alamos***	New Mexico Gas Co.*	Zia Natural Gas Co.**
50 Therms	44.00	**45.76**	58.81	57.82
75 Therms	61.25	**63.51**	82.22	79.73
100 Therms	78.50	**81.26**	105.62	101.63
150 Therms	113.00	**116.76**	152.44	145.45

**Average of 12 months variable Cost of Gas commodity rate used*

*** Average of all service areas used for comparison*

2022 Gas Rate Increase

Overview

- Budgets approved in the FY2023 budget cycle included a 8% overall increase in revenues from rates.
- The Gas Rates consist of 3 components
  - Flat Monthly Service Charge (unchanged since 2009)
  - Fixed Charge per therm (unchanged since 2016)
  - Cost of Gas Pass Through
- NMMEAA Discount

LOS ALAMOS

Customer Base

- 4-year Average

	Los Alamos	White Rock	Total
Residential	5029	2342	7371
Multifamily	58	0	58
Commercial	315	56	371
County	34	10	44
Schools	26	2	28

	Small Meter	Large Meter
Residential	7351	20
Multifamily	13	45
Commercial	224	147
County	15	29
School	12	16

LOS ALAMOS

Overview

- Typical bill estimates use 75 therms to calculate the effects of increases on residential customers

	75 Therms or Under	Total %
Residential	4760	65%
Multifamily	10	17%
Commercial	201	54%
County	16	36%
Schools	12	43%

Therms*	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
0	216	290	237	176	77	61	52	52	60	65	98	177
100	6679	7619	6598	7620	5724	3372	1935	2002	2961	5766	6994	6579
200	51	37	24	87	1085	3289	3411	3647	3735	2038	456	109
300	6	5	3	4	87	587	1190	1193	787	146	24	10
400	2	2	3	2	8	79	229	263	113	24	4	3
500	2	2	2	1	3	13	48	81	32	8	3	2
600		1	2		1	4	12	28	12	7	1	2
700	1			1	1	2	4	11	6	4	1	1
800		1		1		1	3	5	5		1	1
900			1		1		1	3	3	2	1	1
1000							1	2	3	2		1
1100					1		1	2	1		1	
1200	1							2		1	1	1
1300								1	1		1	
1400						1	2	1		1		
1600						1	1					
1700							1		1			1
1800						1						
6700												1
Total	**6958**	**7957**	**6870**	**7892**	**6988**	**7411**	**6891**	**7293**	**7720**	**8064**	**7586**	**6889**

**Rounded to the nearest 100 therms*

Consumption/Usage

- Average monthly consumption in therms by customer type

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
Residential	132,702	128,951	113,393	196,607	448,556	852,333	1,009,701	1,101,115	972,986	657,475	354,649	190,796	6,159,264
Multifamily	11,355	9,882	10,513	16,944	36,278	52,694	60,378	54,898	59,985	41,284	28,192	16,392	398,795
Commercial	59,438	46,114	49,787	59,594	108,093	177,731	239,016	204,213	177,571	123,854	81,940	60,042	1,387,393
County	12,012	7,858	8,807	13,726	28,176	50,617	52,387	57,182	53,608	31,311	20,819	13,877	350,380
Schools	3,203	3,866	4,448	8,561	20,835	31,435	39,534	33,465	44,432	30,172	11,798	6,740	238,489
Total	**218,710**	**196,671**	**186,948**	**295,432**	**641,938**	**1,164,810**	**1,401,016**	**1,450,873**	**1,308,582**	**884,096**	**497,398**	**287,847**	**8,534,321**

LOS ALAMOS

Consumption/Usage

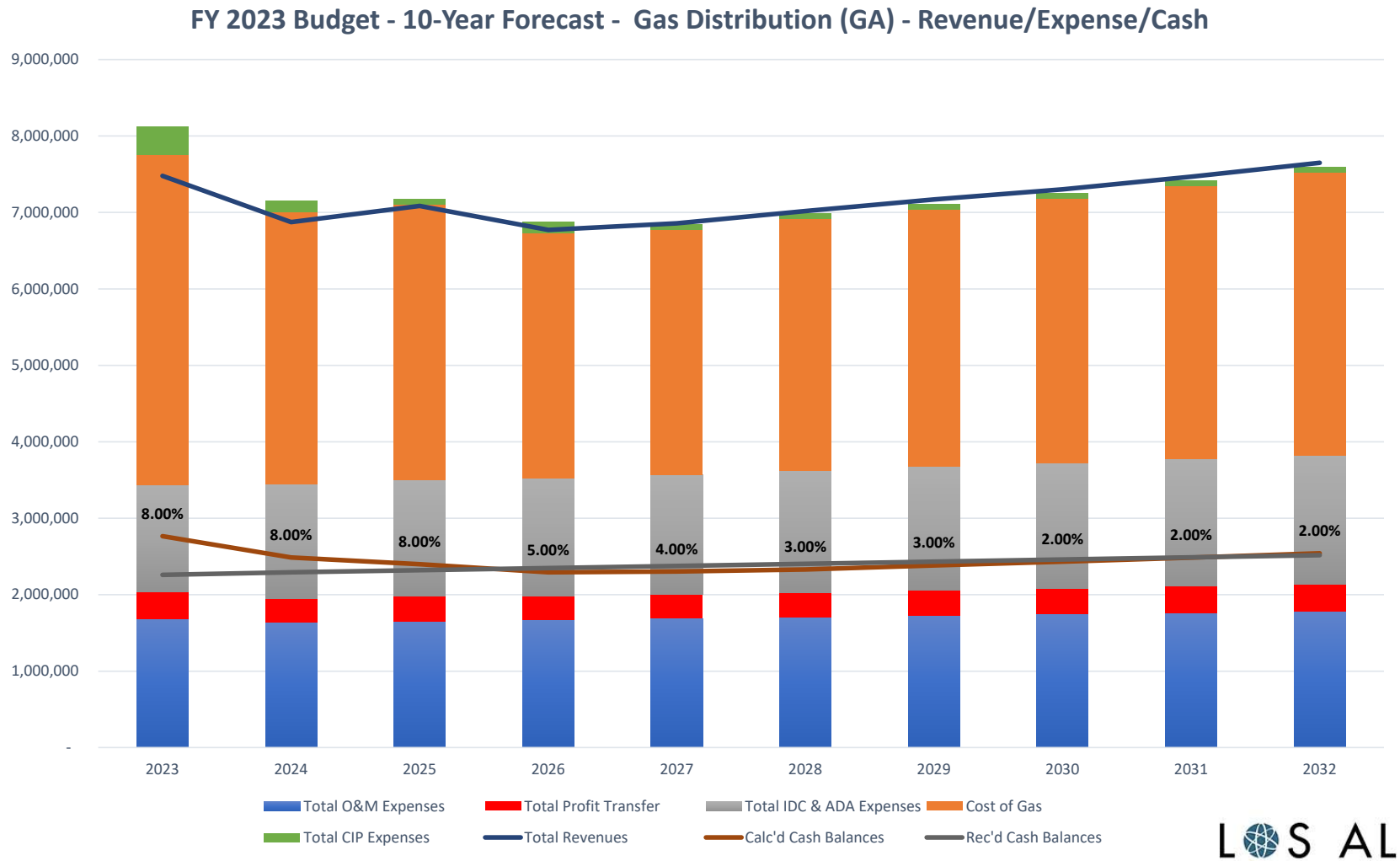
- Los Alamos and White Rock residents' average monthly household usage in therms

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total Average
Los Alamos	20	17	17	28	69	114	145	149	128	84	48	29	71
White Rock	18	15	15	19	55	117	151	155	123	77	43	25	68

- Total average monthly usage in therms by location

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total Average
Los Alamos	90,491	94,656	78,809	153,004	319,940	579,081	657,010	737,480	684,323	477,101	253,118	131,601	354,718
White Rock	42,211	34,295	34,584	43,603	128,616	273,252	352,691	363,635	288,663	180,374	101,532	59,195	158,554

LOS ALAMOS


FY 2023 Budget - 10-Year Forecast - Gas Distribution (GA) - Revenue/Expense/Cash
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
-
8.00%
8.00%
8.00%
5.00%
4.00%
3.00%
3.00%
2.00%
2.00%
2.00%
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
Total O&M Expenses
Total Profit Transfer
Total IDC & ADA Expenses
Cost of Gas
Total CIP Expenses
Total Revenues
Calc'd Cash Balances
Rec'd Cash Balances

Proposed Rates

Gas Rate Schedule 7-A, 7-E, 7-L, 7-N

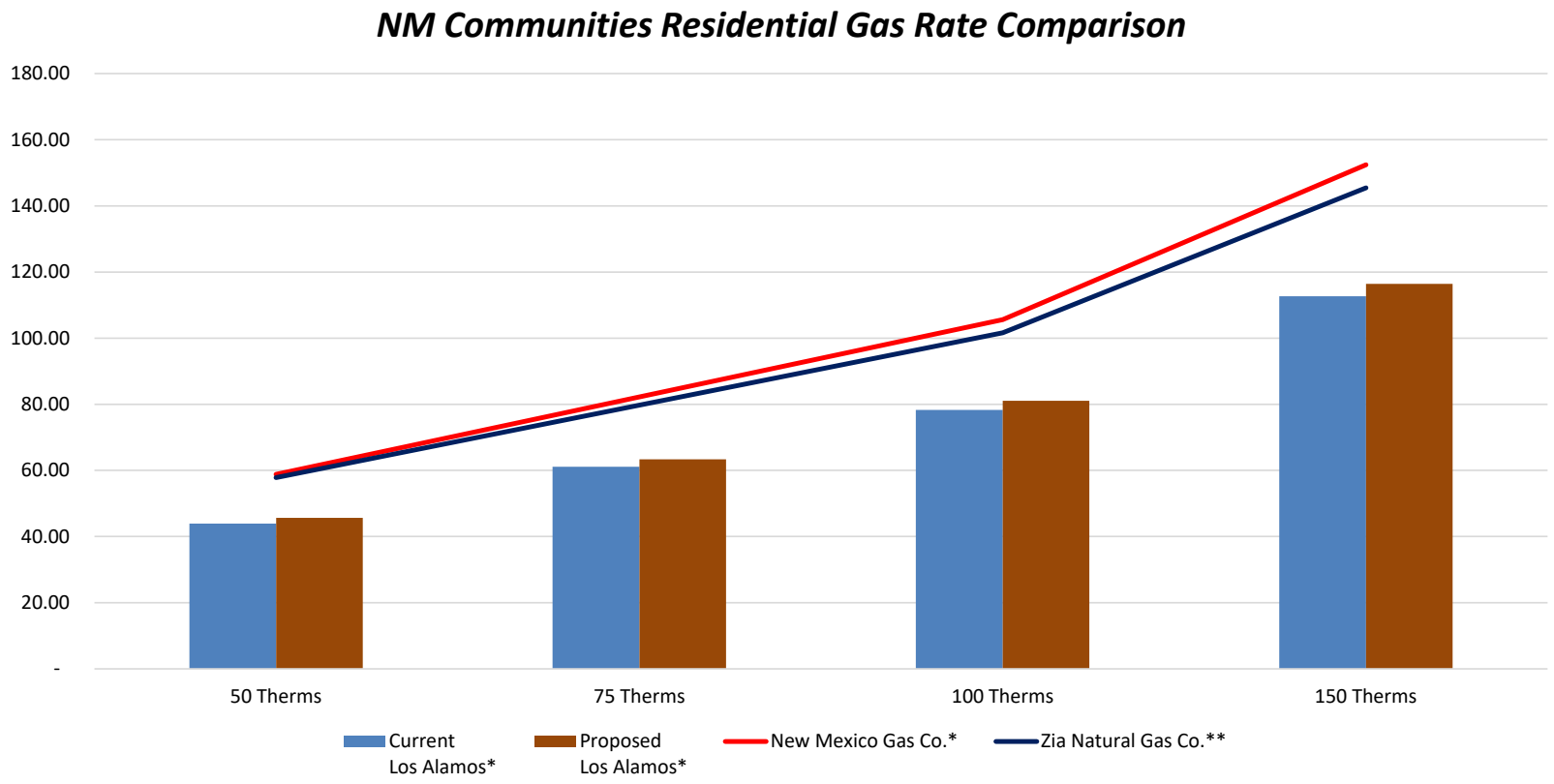
		SERVICE CHG - SML METER	SERVICE CHG - LRG METER	FIXED CHARGE
Residential Multifamily Commercial	through 09/30/2022	$9.50	$28.50	$0.23
	After 09/30/2022	$10.26	$30.78	$0.25
	After 09/30/2023	$11.08	$33.24	$0.27
	After 09/30/2024	$11.97	$35.90	$0.29
	After 09/30/2025	$12.57	$37.70	$0.30
County School	through 09/30/2022	$9.50	$28.50	$0.20
	After 09/30/2022	$10.26	$30.78	$0.22
	After 09/30/2023	$11.08	$33.24	$0.24
	After 09/30/2024	$11.97	$35.90	$0.26
	After 09/30/2025	$12.57	$37.70	$0.27

Estimated bills with proposed rates for 75, 100, 150, 200, 300 therms with a small meter charge.

	75 therms	100 therms	150 therms	200 therms	300 therms
through 09/30/2022	$56.75	$72.50	$104.00	$135.50	$198.50
After 09/30/2022	$59.01	$75.26	$107.76	$140.26	$205.26
After 09/30/2023	$61.33	$78.08	$111.58	$145.08	$212.08
After 09/30/2024	$63.72	$80.97	$115.47	$149.97	$218.97
After 09/30/2025	$65.07	$82.57	$117.57	$152.57	$222.57

LOS ALAMOS

Overview



LOS ALAMOS

Questions