



HURRICANE CITY UTAH

Mayor
Nanette Billings

City Manager
Kaden C. DeMille

Power Board
Mac J. Hall, Chair
Jerry Brisk
Pam Humphries
Dave Imlay
Joseph Prete
Charles Reeve

Power Board Meeting Agenda

4/6/2022

3:00 PM

Power Department Meeting Room – 526 W 600 N

Notice is hereby given that the Power Board will hold a Regular Meeting in the Power Department Meeting room located at 526 W 600 N, Hurricane, UT. A silent roll call will be taken, along with the Pledge of Allegiance and prayer by invitation.

AGENDA

1. Pledge of Allegiance
2. Prayer
3. Approval of Minutes from February 2022

STAFF REPORTS

Scott Hughes/Power Director
Brian Anderson/Transmission & Distribution Superintendent
Michael Ramirez/Service Superintendent
Jared Ross/Substation & Generation Superintendent

OLD BUSINESS

1. DAQ EV Charging Grant Update
2. Public Infrastructure District (PID) Update
3. Updating Various Power Related Fees Discussion and Possible Decision

NEW BUSINESS

1. Technical Task Force (TTF) Update
2. UAMPS
 - A. Steel Solar Update
 - B. Muddy Creek Update
 - C. San Juan/Enchant Update
 - D. Horse Butte Wind Update
 - E. CFPP Update
3. Budget
4. Closed Session





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The Hurricane City Power Board met on February 22, 2022, at 3:00 p.m. at the Clifton Wilson Substation on 526 W 600 N.

In attendance were Chairman Mac Hall, Jerry Brisk, Pam Humphries, Dave Imlay, Joseph Prete, Charles Reeve, Fred Resch, Scott Hughes, Brian Anderson, Michael Ramirez, Jared Ross, and Crystal Wright.

Mac Hall welcomed everyone to the meeting; Dave Imlay led the Pledge of Allegiance and Jerry Brisk offered the prayer. Dave Imlay motioned to approve minutes from October 2021, November 2021, and January 2022. Pam Humphries seconded the motion. Motion passed unanimously.

Scott Hughes: Reported about Federal funding opportunities availability. UAMPS brought in an outside person that we could sign up for a consultation regarding federal funding opportunities specific to us. Reported that we are down another employee who is out with a non-work-related injury for approximately six weeks. Dave Imlay asked a question about where the wage scale is for our open position. Scott Hughes explained that the wage ranges from a groundsman to a journeyman for that position. Discussed reasons behind a potential move of Power Board meetings to the first Wednesday of the month. Reasons include financials coming out the last week of the month preventing us from consistently having monthly budget numbers to report. Also cuts down on Monday holidays preventing preparation for power board. Board approved moving the monthly public meeting date. We need to determine what needs to be done to make that change with the City Recorder. Decision to skip the meeting in March and have meeting the first Wednesday in April.

Brian Anderson: Crew terminated switches in Zion Vista. 600 N Phase 2 Transmission Project has taken a large portion of our workload this month. Steel pole base is set and then the top is jacked onto the base. Question about how long to wait for concrete to set before base can be placed on it. A report on concrete hardness must be received before setting the base. It is 21 days minimum. Height of poles is 70-71'. All poles are set. Transmission wires are pulled in and clipped. May possibly request an extension for the outage with Rocky Mountain Power to be able to finish project. Provided update on the 1150 W Transmission Route. Plan was 138kv to 69kv substation on parcel owned off 600 North. ICPE likes the shape and size of property. Talked about potential route as well as building a substation. Going further south, we contacted airport to find out what the restrictions would be to have poles closer to airport. Brian talked with Kirt from JVIation about restrictions. Decision was made that it is possible to install a line closer to the airport with beacons on affected poles. A route down SR7 is still needed and would loop with this potential line. Dave asked if we would hire right-of-way procurement since we don't have the time to complete the task ourselves. Brian confirmed that we would. Update on the tree trimmers which are about three-quarters of the way done. Discussed building clearance difficulties. Buildings continue to be built too close to our power lines. Variations to current code make things difficult to consistently enforce. This is just informative so we can begin drafting something to get on the books. We can be stricter than National Electric Code (NEC), just not less strict. Mac Hall expressed concern that any changes could affect property values, but to move forward with writing something up and



39 see if we can find a way to make something work. Introduced Tyson Irvine in person. He is a Journeyman
40 Lineman that is going into Substation program.

41
42 **Michael Ramirez:** Discussed high density issues. Whenever high density has been built, it causes issues
43 because the space in a joint utility easement for all utilities isn't an effective amount of space on these lots.
44 Asking the board for some direction for any recourse or ideas on how to deal with the issue. Mac has some
45 ideas. Discussed being tasked with an overall fee review. Presented preliminary information regarding research
46 on a fee restructuring. After discussion and questions, Mac requested for this to be put back on the agenda for
47 action at the next meeting. Request for special meeting in between to discuss questions and come up with
48 some solutions.

49
50 **Jared Ross:** Provided Sky Mountain Substation update on progress. Poles are set, curbing is in, conduit is
51 stubbed, and subgrade is done. Waiting on Interstate for concrete for sidewalks. Provided Three Falls
52 Substation update on progress. Test pits have been drilled for geotechnical survey. Working on elevation
53 profile and site engineering for drainage issue that was discovered. Jared Ross traveled and observed the
54 substation transformer testing on-site in North Carolina. The actual transformer was delivered yesterday.

55
56 **Generator #9 Discussion and Possible Decision:** Jared Ross reported on the increased price to purchase
57 generator. Confirmed with Wheeler that we could purchase the generator and there would not be a penalty to
58 cancel the order if we decided not to go through with the order. Dave Imlay suggested to investigate
59 refinancing both generators we have financed with UAMPS to include the third generator. This way it's on
60 UAMPS books instead of ours. Consensus of board is to find a way to move forward with the purchase of
61 Generator #9.

62
63 **DAQ EV Charging Grant Update:** Scott working on getting bids from two companies. EV charging is gaining
64 traction at the city.

65
66 **Fiber Discussion:** Scott Hughes presented three options. This is in conjunction with the topic of Pole
67 Attachments that follows. Option one would be allow everyone to attach with an engineering requirement and
68 a pole attachment agreement. Option two would be no more pole attachments allowed, everyone would have
69 to go underground. Option three would be for Hurricane City to provide backbone fiber throughout the city
70 and lease individual fiber to companies. Regarding option three, Dave Imlay presented a concern with shortage
71 in labor already existing and adding another division. Potential to contract the work out.

72
73 **Pole Attachment Agreement Discussion and Possible Decision:** Existing pole attachment needs to be
74 amended to definitively say \$10 annually per pole. Discussion about whether we can keep anyone off poles
75 after we began allowing attachments. Dave Imlay suggested to contact UAMPS regarding existing litigation
76 regarding pole attachments. Mac Hall agreed that we don't like multiple attachments and asked if we could go
77 underground. Joseph Prete would like us to investigate what we have set up already as a standard with TDS
78 before continuing.

79
80 **Public Infrastructure District (PID) Discussion and Possible Decision:** Scott Hughes presented information and
81 requested guidance on whether to participate or include some of our infrastructure in the PID's that are being
82 considered for the area out south of town. Pam Humphries asked for clarification on what exactly a PID entails.
83 Joseph Prete provided an overview of the basics of PID's. Dave Imlay discussed the infrastructure that should

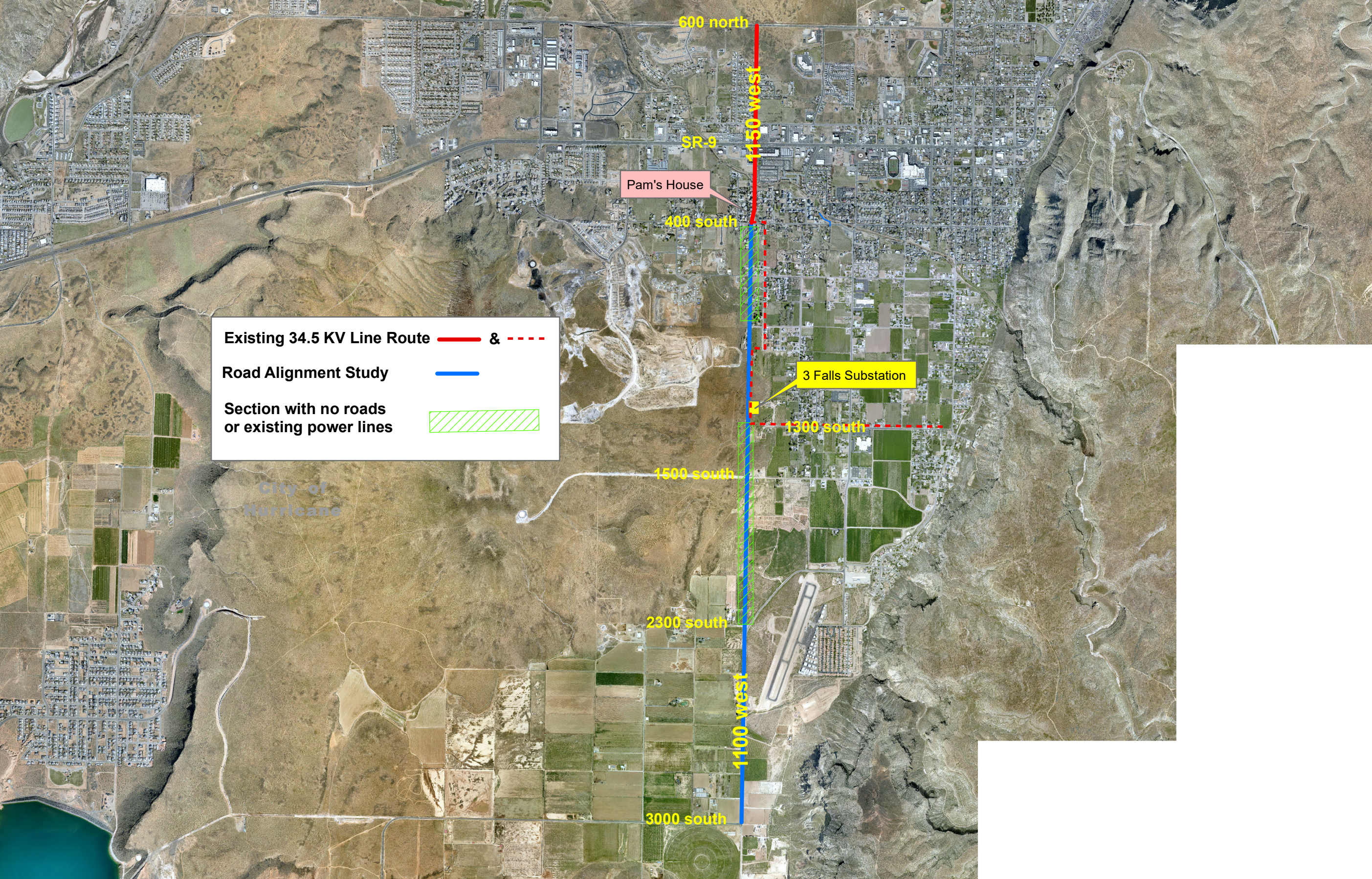
84 be covered by impact fees. The board agreed unanimously that current impact fees are covering our costs of
85 infrastructure and they do not recommend the Power Department getting involved in any PID's.
86

87 **UAMPS:** Due to lack of time, most updates were forwarded to the next meeting. There was an update
88 provided about Colorado River Storage Project (CRSP) water outlook. Current water level projections have
89 improved slightly over previously provided projections.
90

91 **Budget:** Scott Hughes reported that market power price forecast is improved over last projections that came
92 out from UAMPS. No updated monthly financial budget information is available due to the time of month that
93 power board was held.
94

95 The Power Board adjourned at 5:45 p.m. The next Power Board Meeting is scheduled for April 6, 2022, at 3:00
96 p.m.

DRAFT



Existing 34.5 KV Line Route — & - - -

Road Alignment Study —

Section with no roads or existing power lines

Dynamic List of Acronyms For Power Industry

BEA	Battelle Energy Alliance
BPA	Bonneville Power Authority
CFPP	Carbon Free Power Project
COLA	Construction & Operating License Application
CREDA	Colorado River Energy Distributors Association
CRSP	Colorado River Storage Project
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
EP	Emergency Plan
EPC	Engineering, Procurement and Construction
ER	Environmental Report
FNTF	Final Notice To Proceed
FSAR	Final Safety Analysis Report
HSE	Health, Safety, and Environment
INL	Idaho National Laboratory
IPC	Idaho Power Company
LGIA	Large Generator Interconnect Agreement
LOI	Letter Of Intent
LWA	Limited Work Authorization
M&O	Maintenance and Operation
MSA	Master Services Agreement
MTO	Material Take-Off
NEPA	National Environmental Policy Act
NRC	Nuclear Regulatory Committee
NTP	Notice To Proceed
OEM	Original Equipment Manufacturer
PAC	Pacificorp
PCE	Project Cost Estimate
PMC	Project Management Committee
PPA	Power Purchase Agreement
PS	Compression and Shear
PSHA	Probabilistic Seismic Hazard Analysis
PUD	Public Utility District
ROW	Right Of Way
SDA	Standard Design Approval Application
SPD	Standard Plant Design
SSHAC	Senior Seismic Hazard Analysis Committee
TEA	The Energy Authority
TO	Task Order
TSR	Transmission Service Request
USGS	United States Geological Service
VHA	Volcanic Hazards Analysis
WAPA	Western Area Power Administration
ZLD	Zero Liquid Discharge

	ITEMS FOR REVIEW	CURRENT	PROPOSED	NOTES
PRIMARY SERVICE (HIGH VOLTAGE)	APPLICATION DESIGN/REVIEW (PER DESIGN/REVIEW)	\$0	\$150	
SECONDARY SERVICE (LOW VOLTAGE)	APPLICATION DESIGN/REVIEW (PER DESIGN/REVIEW)	\$0	\$50	
SUBDIVISION DESIGN/REVIEW	DESIGN/REVIEW (PER LOT)	\$0	\$15	
DESIGN & ESTIMATE	DESIGN & ESTIMATES (i.e. LINE EXTENSIONS)	\$0	\$75/HOURLY FEE (UPFRONT)	
SOLAR	SOLAR APPLICATION REVIEW	\$75	\$200	
	SOLAR APPLICATION RE-REVIEW	\$75	\$75	
UTILITY	NON-PAYMENT RECONNECTS (NORMAL HOURS)	\$25	\$50	
	NON-PAYMENT RECONNECTS (AFTER HOURS)	\$52.50	\$120	
	TAMPER METER FEE	\$25	\$250	
SPECIAL EVENTS	SPECIAL EVENTS POWER (NON-CITY SPONSORED)	\$0	\$100	WILL METER TO COLLECT DATA. METERED POWER BILL TO RECREATION DEPT?
CONTRACTORS	PREQUALIFIED CONTRACTOR TESTING	\$50	\$100/COMPANY + \$50/PERSON	

JUST FOR REFERENCE

Power Employee w/benefits	\$65	\$98	
Power Administrative Assistant w/benefits	\$27	\$41	
Small Service Bucket	\$38.50	\$38.50	
City Office Personnel w/benefits	\$25	\$38	

Transmission Grid Operations Operating Procedure PCC-917 St. George Area Load Shedding

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1. VERSION HISTORY

This procedure shall be, at a minimum, reviewed annually and updated as needed.

Date:	Action:	By:	Change Tracking:
6/16/2021	Created	WAR	Created
7/9/2021	Updated	WAR	Updated language and some methodology regarding restoration of load
7/21/2021	Updated	WAR	Incorporated comments from UAMPS
2/9/2022	Update	WAR	Updated for 2022 with RAS

2. PURPOSE

Under high net loading conditions, loss of certain transmission elements can result in Real Time Contingency Analysis (RTCA) exceedances for the next credible contingency.

3. BACKGROUND

The St. George area may require immediate action to shed load to resolve overload issues for the N-1-1 contingency scenarios as follows:

1. Following a failure of the Red Butte RAS, loss of one or more 345/138 kV transformers at Central/Red Butte
2. Loss of multiple 138 kV lines between Central and St. George.

Commented [MV1]: This statement is not clear.

The relevant transmission facility ratings are as follows:

Chart 1 – Red Butte/St. George area Transmission Limits, as of 1/24/2022

Element	Normal Rating	Emergency Rating
<i>Transformers</i>		
Red Butte 345/138 kV Transformer	448 MVA	502 MVA
Central 345/138 kV Transformer #1	255 MVA	285 MVA
Central 345/138 kV Transformer #2	255 MVA	285 MVA
<i>Transmission Lines</i>		
Red Butte-St. George 138 kV #1	201 MVA	245 MVA
Red Butte-St. George 138 kV #2	201 MVA	245 MVA
Central-St. George 138 kV #1	266 MVA	344 MVA
Central-St. George 138 kV #2	266 MVA	344 MVA

It is anticipated that the exposure for load shed will be minimal, due to the approximately 260 MW of solar generation currently at the Red Butte 138 kV substation. Additionally, there is approximately 80 MW of local St. George area thermal generation (not dispatched by PacifiCorp). The anticipated peak loading for 2022 is approximately 602 MW, which results in a net loading of 342 MW with no thermal generation, or 262 MW with thermal generation.

Instantaneous Tripping of Elements

The Red Butte 345/138 kV transformer has relay settings that will trip the transformer within 2 seconds of exceeding its emergency MVA rating. The Central 345/138 kV transformers are not currently capable of being set in a similar manner and will not trip once their emergency MVA rating has been exceeded.

Red Butte Transformer RAS

As of summer 2022, there is a RAS at the Red Butte/Central substations that is designed to protect the three 345/138 kV transformers in the event of a thermal overload. So long as the

RAS is in service and functional, it is not anticipated that operators will be required to act following the loss of a single transformer.

If the RAS conditions are met, the RAS will automatically reduce loading at St. George by tripping 138 kV lines in order to reduce net loading. Once the load has been reduced to an acceptable amount, load restoration can begin. The restoration process is outlined in the addendum to this procedure.

4. **PROCEDURE**

Loss of 138 kV transmission lines between Red Butte/Central and St. George

For the loss of transmission lines between Red Butte/Central and St. George the PacifiCorp Grid operator will use the most recent L&R Report capacity entitlement percentages per the Transmission Grid Operations Operating Procedure PCC-917 Addendum to communicate load amounts based on total capacity in order to return net loading below the applicable ratings of the remaining lines. Local entities will determine at which locations this load reduction shall occur, and how quickly the load shed could occur. This information will be provided to the Reliability Coordinator as the post-contingency load shed plan if another line were to be lost. The exact procedure is outlined in the addendum to this document.

The two lines between Central and St. George are constructed at 345 kV, but operated at 138 kV, with a continuous rating of 266 MVA, and an emergency rating of 334 MVA. The Central lines share a breaker with the 138 kV west bus, and the Red Butte lines share a breaker with the east bus.

The two lines between Red Butte and St. George are constructed and operated at 138 kV, with a continuous rating of 201 MVA, and an emergency rating of 245 MVA. The Red Butte-St. George #1 line shares no breakers with other transmission elements, and the Red Butte-St. George #2 line shares a breaker with the Red Butte 345/138 kV transformer.

Loss of Red Butte RAS

If the Red Butte RAS is completely unavailable, then the following steps apply:

Loss of Red Butte 345/138 kV transformer

Following the loss of the Red Butte 345/138 kV transformer, if the RTCA shows that loss of one of the two remaining Central 345/138 kV transformers will overload the remaining transformer, PacifiCorp will utilize the most recent capacity entitlement percentages per the Transmission Grid Operations Operating Procedure PCC-917 Addendum L&R Report to communicate remaining capacity to St. George, UAMPS, and Deseret and implement the pre-determined steps in the appendix to reduce net loading on the 138 kV system.

Commented [MV2]: It was my understanding that following loss of one transformer (and RAS is armed) that “as a first step, one transformer at Toquerville 69 kV should be transferred to an alternate source (Coleman) to reduce loading.

Commented [MV3]: Should there be a procedure for when RAS becomes armed? i.e statement above? “as a first step, one transformer at Toquerville 69 kV should be transferred to an alternate source (Coleman) to reduce loading.

It should be noted that this is **not a stability issue**; the voltage on the St. George 138 kV bus and the Red Butte 345/138 kV buses do not fall below 1.0 p.u. due to the reactive compensation in the area, primarily the Red Butte and St. George Static VAR Compensators (SVCs).

As a first step, one transformer at Toquerville 69 kV may be transferred to an alternate source (Coleman) to reduce loading. Additionally, entities with local area generation can elect to increase generation in lieu of firm load shed, as both of these methods reduce net loading through the transformer.

Loss of one Central 345/138 kV transformer

Following the loss of a single Central 345/138 kV transformer, if the RTCA shows that loss of the Red Butte 345/138 kV transformer would cause the remaining Central 345/138 kV transformer to exceed its emergency rating, and the net loading at Red Butte is below the capacity of the Red Butte 345/138 kV transformer (448 MVA), PacifiCorp can remove the Central 345/138 kV transformer from service, leaving the entire St. George area load (estimated peak gross load 550 MW) and generation (estimated 260 MW solar and 80 MW thermal) radial off the remaining Red Butte 345/138 kV transformer.

Transmission Grid Operations
Operating Procedure PCC-917 Addendum
Southwest Technical Task Force Load Shed and Restoration
Outline

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Future Mitigation	Error! Bookmark not defined.
5. Specific contact information and procedural information.....	5

1. VERSION HISTORY

This procedure shall be, at a minimum, reviewed annually and updated as needed.

Date:	Action:	By:	Change Tracking:
1/25/2022	Created	WAR	Created

2. PURPOSE

This document is designed to assist in the preparation for load shed due to the operation of the Red Butte RAS. It also provides guidance for load restoration following operation of the Red Butte RAS.

3. BACKGROUND

The St. George area may require immediate action to shed load to resolve overload issues for the N-1-1 contingency scenarios as follows:

1. Following a RAS Failure, loss of one or more 345/138 kV transformers at Central/Red Butte
2. Loss of multiple 138 kV lines between Central and St. George.

Additional information can be found in PCC-917.

Commented [MV1]: "BACKGROUND" text is not consistent with purpose and is the same as in the PCC917 document.

4. PROCEDURE

One Red Butte/Central 345/138 kV Transformer out of service, or System Approaching Continuous Ratings of Red Butte/Central to St. George 138 kV Lines, or RTCA shows an exceedance for the next credible contingency

4.1 Coordination & Determination of the Load Shed Plan

If the RAS is anticipated to arm, the following steps should occur:

- PacifiCorp Grid to notify St George, Dixie, Garkane, and PacifiCorp Dispatch (Salt Lake Control Center)
 - St. George dispatch (435-634-5812),
 - Dixie Power dispatch (435-673-0060),
 - Garkane (435-689-0347)¹
- St George to notify UAMPS, Washington, Hurricane, and Santa Clara
- All entities join conference line (801-220-6098)
- Evaluate loads that can be transferred out of the Central / Red Butte system.
 - Transfer part of Toquerville to Coleman
 - Verify Dixie Moyle Substation on West Cedar
- Group to coordinate on system conditions and expected forecast.

In addition, if the system is approaching the continuous ratings, but not exceeding the emergency ratings of the Red Butte/Central to St. George 138 kV lines:

- PacifiCorp to determine post-contingency capacity on the system

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¹ Alternate Garkane Contact: 435-899-1162

- Southwest Utah Entities to identify where to reduce load within their respective systems
- If RTCA results show that the next contingency will exceed the emergency rating of any of the 138 kV lines between Red Butte/Central and St. George
 - Notify the RC of the ~~Load~~ ~~Shed~~ ~~Plan~~ ~~identified above~~
 - If RC requests, implement load shed plan identified above

4.2 System Exceeding Continuous Ratings of Red Butte/Central to St. George 138 kV Lines

If system conditions are such that the continuous ratings of the Red Butte/Central to St. George 138 kV lines are being exceeded in real time, implement the ~~Load~~ ~~Shed~~ ~~Plan~~ ~~as determined under Section 4.1~~ ~~identified above~~ within 30 minutes.

Red Butte RAS Operates

If the RAS operates, the following steps should occur:

- St George to notify UAMPS, Washington, Hurricane and Santa Clara
- All entities join conference line (801-220-6098)
- PacifiCorp Grid determines the load allocations for each entity based on the annual L&Rs, so long as the total load remains below all reliability limits.
 - Net load allocation for each entity is based on the load each entity places on the Red Butte / Central transformers. (Total Connected Load – Generation)

Entity	Capacity With Toquerville transferred	Capacity Without Toquerville transferred
UAMPS	55.9%	55.0%
Dixie	30.9%	30.2%
PacifiCorp	11.6%	13.3%
Garkane	1.6%	1.5%

Table 1 PacifiCorp shall update the percentages in this table annually consistent with the annual L&R submittals

- Entities exceeding load allocations must reduce net loading within 10 minutes either by shedding load or increasing generation.

Example: Following operation of the RAS, the remaining capacity on the system is 448 MVA. UAMPS is allocated 55% of 448 MVA = 246 MVA. If UAMPS has a current loading of 300 MVA, UAMPS must reduce their NET load by 54 MVA

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Commented [MV2]: Who notifies DIXIE?

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Commented [MV3]: Is example needed if actual allocation percentage indicated??

- Entities shed by the RAS scheme isolate connected loads that have been shed to prepare for energizing.
 - Loads should be isolated to minimize load pickup for each breaker operation, no more than 20 MVA at a time if practically possible.
- PacifiCorp Grid close in lines opened by RAS.
- Shed entities pick up load to their current load allocations.
- PacifiCorp to evaluate loads that can be transferred out of the Central / Red Butte system and re-evaluate load allocations as required.

PacifiCorp Grid to monitor system and give updates as needed.

System Restoration following RAS Action

Once system is stable, ~~evaluate dividing~~ load allocation shall be based on capacity entitlement per the existing Integrated Transmission System (ITS) and Joint Operating Agreement (JOA) between UAMPS & PacifiCorp, agreements such as the Joint Operating Agreement (JOA) or Integrated Transmission System (ITS), not to exceed reliability limits, as further described below.

- UAMPS entitlement shall be 56.74%* of available capacity per the JOA & ITS
- PacifiCorp entitlement shall be 43.26%* of available capacity.
 - PacifiCorp shall be responsible for coordinating allocation of its available capacity to Deseret Power members (Dixie Power & Garkane) and Rocky Mountain Power customers.
 - PacifiCorp shall be responsible for coordination of its available capacity to provide the UAMPS & Deseret Power AllFed (CRSP) deliveries per RS 262, also referred to as "the 2436", between PacifiCorp & Western Area Power Administration (WAPA).

PAC Grid Operations will ensure total net loading is below the continuous rating of the remaining transformer(s).

* These numbers may be changed from time-to-time consistent with amendments to the JOA & ITS.

Commented [MV4]: This should occur when the first transformer is lost and prior to RAS operation.

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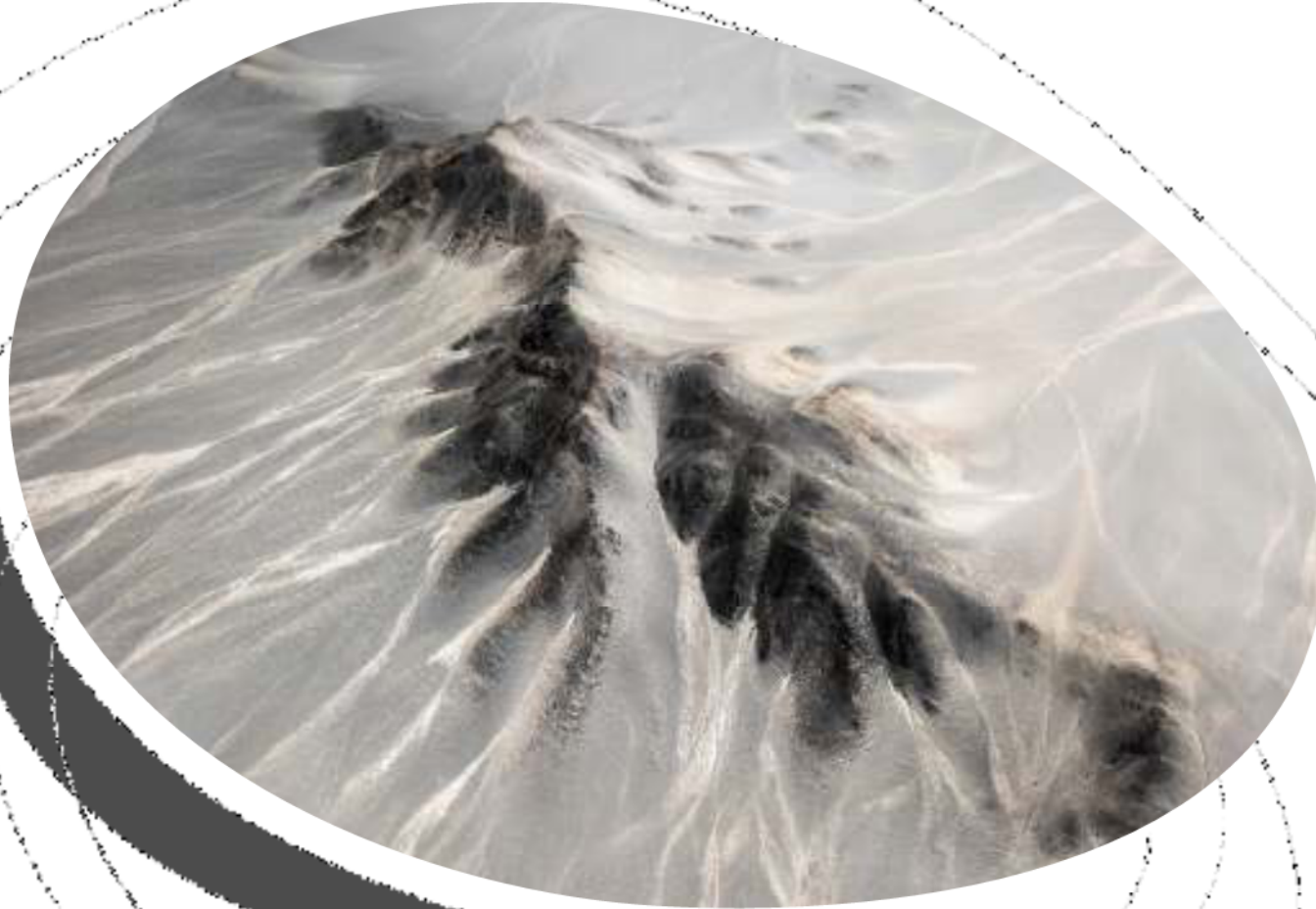
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Commented [RS5]: Rachel to confirm correct Rate Schedule #

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5. L&R DATA



Muddy Creek: PMC Meeting

March 2022

▼ Status Update— Kern River

- **Host Agreement:** Kern provided financial risk calculation for outage time if UAMPS trips KR facility off line for extended period (15 day periods)
 - 9 examples
 - Range=\$10M-42M
 - KR making \$ based on Opal/KR delivery spread
 - Is 15 days the right duration?
 - Can UAMPS procure insurance to cover this risk?
 - Cost of insurance premiums
 - impact to pro forma? O & M sensitivity in pro forma?
- Still waiting actual draft of Host Agreement



Status Update— Ormat EPC Bid Refresh

- UAMPS to send final comments this week to incorporate design mitigation measures to address Kern River's business interruption concerns
- Anticipate having the Ormat EPC Bid refresh by early April

▼
BLM ROW
Application
Status

- Conducting an additional desktop sage grouse analysis
- 15-30 day comment period once EA is issued
- EA issuance (May/June)



Next Steps

- Revised Pro Forma and discuss
 - Insurance costs
 - Ormat EPC Bid refresh
 - Substation costs (ICPE revising)
- Discuss Ormat EPC Bid refresh
- Kern River Host Agreement

▼
High Level
Development
Schedule—
Near Term

- Critical Path Item is getting to an execution version of the Host Agreement
 - Objective is to have an execution version by May PMC meeting
 - Need to have certainty before committing more development dollars
- May PMC deliverables to ask for additional study budget:
 - Updated Pro Forma based on Ormat EPC Bid Refresh
 - Execution Version of the Host Agreement
 - EA issued for BLM ROW
 - Transmission System Impact Study

▼
High Level
Development
Schedule—
Summer
2022

- Deliverables under next phase of Development Work (May-Summer 2022):
 - Execution Version of EPC Contract
 - Power Sales Contract
 - Updating Pro Forma
 - Transmission Work (finalizing LGIA costs and transmission delivery costs)
 - Other permitting work (WY siting council; modification of existing Kern River air permit)

▼
High Level
Schedule—
Power Sales
Contract
Phase

- Starts once Power Sales Contracts have been approved by governing bodies (Fall 2022)
 - Financing (Fall 2022)
 - Issue Notice to Proceed (NTP) to Ormat under EPC Contract
- Ormat construction schedule (nominally identified at 24 months from NTP under EPC Contract)
 - Commercial Operation Date=Fall of 2024
 - Anticipated COD will be updated as part of EPC Bid Refresh



Dear Pool Project Participants,

As discussed in the Pool PMC meeting last week, we have the opportunity for a purchase from PNM for Q3 this summer. Below are details as presented. It includes September and is flat 24x7 product so not as ideal for covering peak hours but would help cover some needs. A price for a market flat firm product for this time is currently about \$150/MWh. PNM is requesting that we supply a bid. We can offer whatever price we want for this contingent product.

Based on our history with the availability of San Juan #4 the last couple of years, we expect to be cut be 15% to 33% of the time. We are estimating a 2% chance to be cut under the system contingency scenario. Cuts would result in needing to replace with the short-term market so should be a factor in the bid price.

Please reply with your kW interest and price you would be interested in bidding (we will need to coordinate a single price for UAMPS). Please contact me or Kelton if you have any questions.

San Juan Purchase Opportunity

- Available pending that FERC approves extension to generate
- PNM selling for July to September 2022
- 50 MW (of PNM 65 ownership) 24x7
- Unit contingent on San Juan #4
 - Get first 50 MW of 65 MW share
- also System contingent EEA2
 - Could be cut if PNM as BA is imminent to or already tapped into required reserves
- Offering to multiple entities so looking for bid
- Want to finalize by mid-April

Market Prices			3/11/2022
Month	HLH	LLH	Flat
Apr-22	\$38	\$41	\$39
May-22	\$38	\$37	\$37
Jun-22	\$92	\$52	\$79
Jul-22	\$205	\$72	\$161
Aug-22	\$227	\$85	\$180
Sep-22	\$136	\$72	\$115
Q3	\$189	\$76	\$152



CARBON FREE POWER PROJECT UPDATE MARCH 2022

SIGNIFICANT ACCOMPLISHMENTS

- UAMPS & Xcel Agreements
 - Term Sheet - Press Release - March 2, 2022
 - Previously Discussed in January PMC Update
 - UAMPS and Xcel Energy Nuclear Services Holdings (Xcel)
 - Outlines process, roles and next steps for Xcel to become the CFPP operator
 - Master Services Agreement (MSA) - Signed – March 4, 2022
 - Xcel to provide consulting services and assistance to support pre-maintenance and operations of the CFPP

NUSCALE UPDATE

- Licensing & NRC Engagement Continues
 - NRC Leadership discussion rescheduled for March 22-24
 - Attendees: CFPP, NuScale, NRC, DOE, Fluor
 - Three Topical Reports are in NRC review/request for information phase
 - A Subchannel analysis topical was not accepted, but NuScale is revising. No issues expected.
 - Emergency Planning Zone Topical will be reviewed in detail with CFPP at March meeting
- Standard Design Approval Application (SDA)
 - SDA on track for late Q4 2022 submittal to support COLA schedule
- Standard Plant Design (SPD)
 - Material Take Offs & other documents from SPD and NuScale equipment provided to Fluor for Class 3 Estimate
 - SPD project completion planned Q3 2022
- NuScale Operations
 - Operational Support Task Order proposal being finalized
 - Operational Program Development on Track

CLASS 3 ESTIMATE UPDATE

- Class 3 Estimate (-20% / +30%) In Development
 - Site Specific Engineering items that are essential to PCE3 are complete
 - Team review of preliminary MTO Reports from Standard Plant Design Project are complete
 - Remaining MTO Reports for site specific content due to complete in March
 - Procurement and Contracts have issued all requests for budgetary pricing input to market
 - 116 packages
 - Engineering preparing technical assessments of market responses
 - Procurement and Contracts developing associated commercial tabulations for Project Management review and input to Estimating
 - Construction Management team developing input to indirect field cost portion of PCE, such as site staffing plans and temporary facility plans
 - Entire team collaborating on development of home office cost input to the PCE
- The Class 3 Estimate is slightly behind schedule & slightly under budget. There are no activities challenging the completion of the estimate on schedule.
 - CFPP is overseeing progress, and engaging in oversight/review activities
 - Staffing has ramped up over the past two months. Focusing on priority activities.
- Projecting completion per the Baseline Schedule, ahead of contractual completion date

CLASS 3 ESTIMATE UPDATE

- Owner Scope Class 3 Estimate Development is on track and includes the following
 - Water to the Site / Water Rights
 - Wastewater Treatment
 - Zero Liquid Discharge (ZLD)
 - Security Facilities
 - Administration Building
 - Warehouse
 - Fire Station
 - Raw Water Enclosure
 - Transmission
- These will be combined with the Fluor developed estimates into one overall CFPP Class 3 Estimate

COLA DEVELOPMENT

- The Task Order (TO) #4 Combined License Application (COLA) Project continued to make good progress in the month of February.
- Development activities continue to grow on key Parts of the COLA including:
 - Final Safety Analysis Report (FSAR – Part 2)
 - Environmental Report (ER – Part 3)
 - Emergency Plan (EP – Part 5)
- COLA progress is ahead of schedule and under budget

COLA DEVELOPMENT (CONT)

- Progress is being made on the development of a path forward for a Limited Work Authorization (LWA)
 - Use of an LWA can allow select site preparation/construction work to start ahead of the NRC approval of the COLA
 - CFPP is evaluating options, approaches, cost and schedule
 - Potential for integration into the COLA Project
- Plans will be finalized in March for additional ecological and cultural surveys at the CFPP Site to fill “gaps” in the data being provided by the INL BEA Team

COLA SITE FIELD INVESTIGATIONS

- Field Work Status:
 - No recordable or lost time injuries during field investigation activities to date
 - Demobilized field personnel from site Feb. 17, 2022
 - Remaining equipment and materials were consolidated into CFPP Administration Area for use in April 2022
 - Continued meteorological data collection as planned
- Planned Spring Activities (April):
 - Perform PS-Suspension Testing on four boring holes
 - Measures compressional and shear wave velocity for seismic analysis
 - Seismic reflection survey
 - Soil resistivity testing
 - Perform Met. Tower lowering for calibration and maintenance
 - Perform installation of culvert extension at intersection of T-11 to Highway 33



CFPP Core Material Sample Preparation at INL for Paleomagnetic Analysis (3/3/22)

COLA SITE FIELD INVESTIGATIONS – SPRING 2022

- Preliminary Plans
 - NEPA/Cultural Resource Surveys: April 14-16
 - Resistivity Testing: April 18-29
 - Culvert Widening: April 18-21
 - MW-05B Well Bollards: April 22-23
 - PS Suspension Testing: April 18-30
 - Met Tower Calibrations: April 18-21
 - Groundwater Sampling: April 18-21
 - Reflection Testing: April 27-May 10

NRC LICENSING & DOE UPDATE

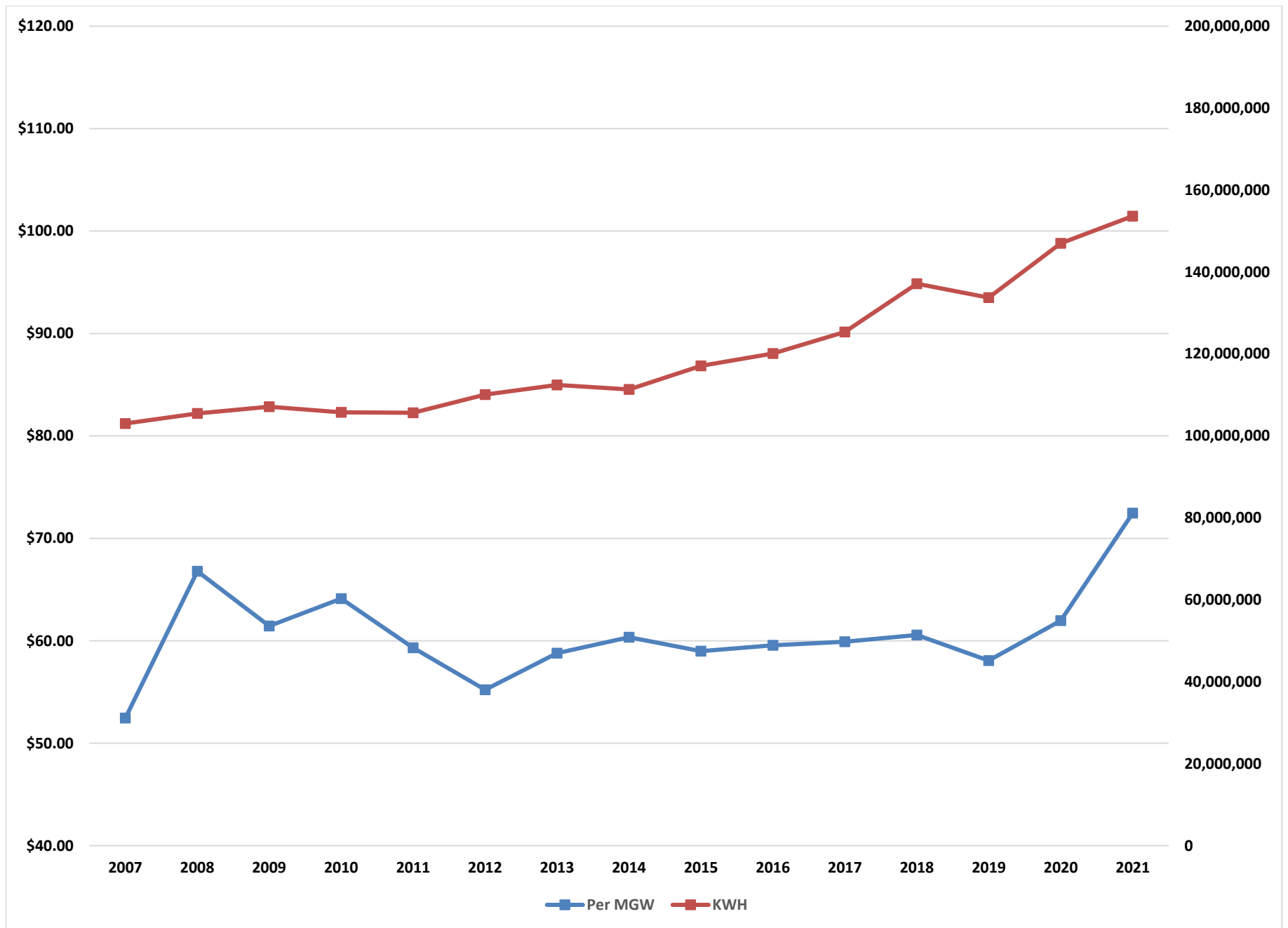
- NRC Monthly Meetings on the COLA have started between the CFPP COLA Licensing Team and the NRC Project Management Team
- NRC/DOE Meeting with CFPP, Fluor and NuScale March 22-24 - Corvallis
- Interface with the Idaho National Laboratory (INL) Team to obtain data and documents needed for the COLA continues in an efficient manner
- The transfer of CFPP critical data to the INL PSHA SSHAC Team was completed in February 2022
 - Additional information will be transferred to the INL PSHA Team as requested
 - The CFPP Project is working with DOE to manage changes/delays in the INL PSHA schedule for SSHAC data output to the COLA Team

UPCOMING ACTIVITIES

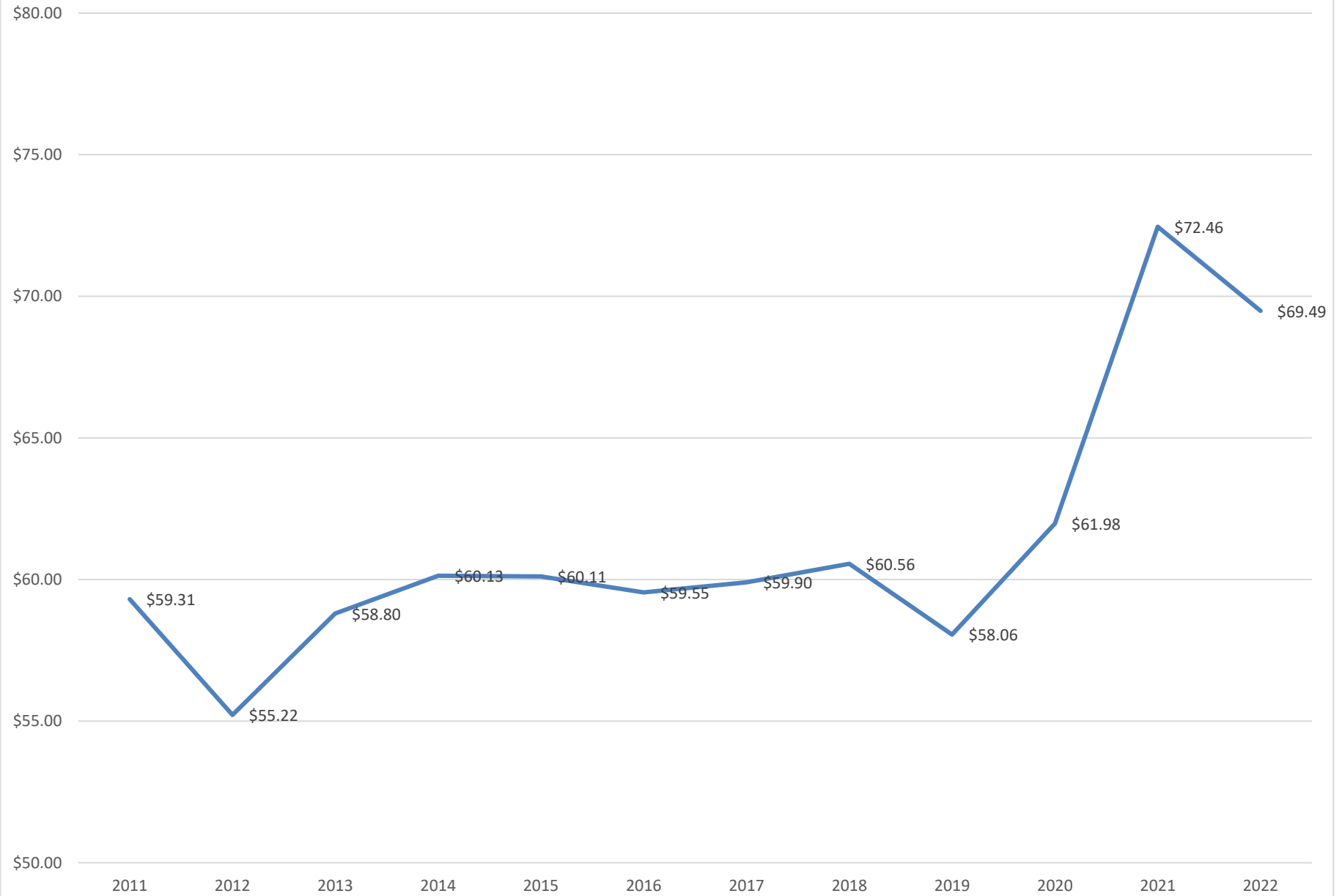
- Class 3 Estimate Reviews in Fluor Offices
- COLA Development and Geotechnical Analysis Continues
- Xcel MSA Task Order Kick-Off Meeting this Week
- Continuing to Develop Contracts
 - Original Equipment Manufacturer (OEM) - NuScale
 - Engineering, Procurement & Construction (EPC) – Fluor
 - Maintenance & Operations (M&O) - Xcel

SUBSCRIPTION UPDATE

- Clark Public Utilities
 - Remain supportive and interested in Project
 - Concerns with Washington statutes regarding participation in joint ventures for generation projects
 - Participation on hold
- Grant Co PUD
 - Continuing progress on due diligence and focus on transmission and participation through Development Coordination Agreement
 - Meeting to be scheduled soon
- Other WA PUD's considering LOIs
- NuScale event in May
 - NRU: 17 members attending NuScale tour and briefing in Corvallis on May 2 and 3
 - Emerald PUD board member attending on May 3 and 4
- Transmission
 - Discussion tomorrow in Pool PMC



Weighted Average



AVERAGE YEARLY POWER PRICES

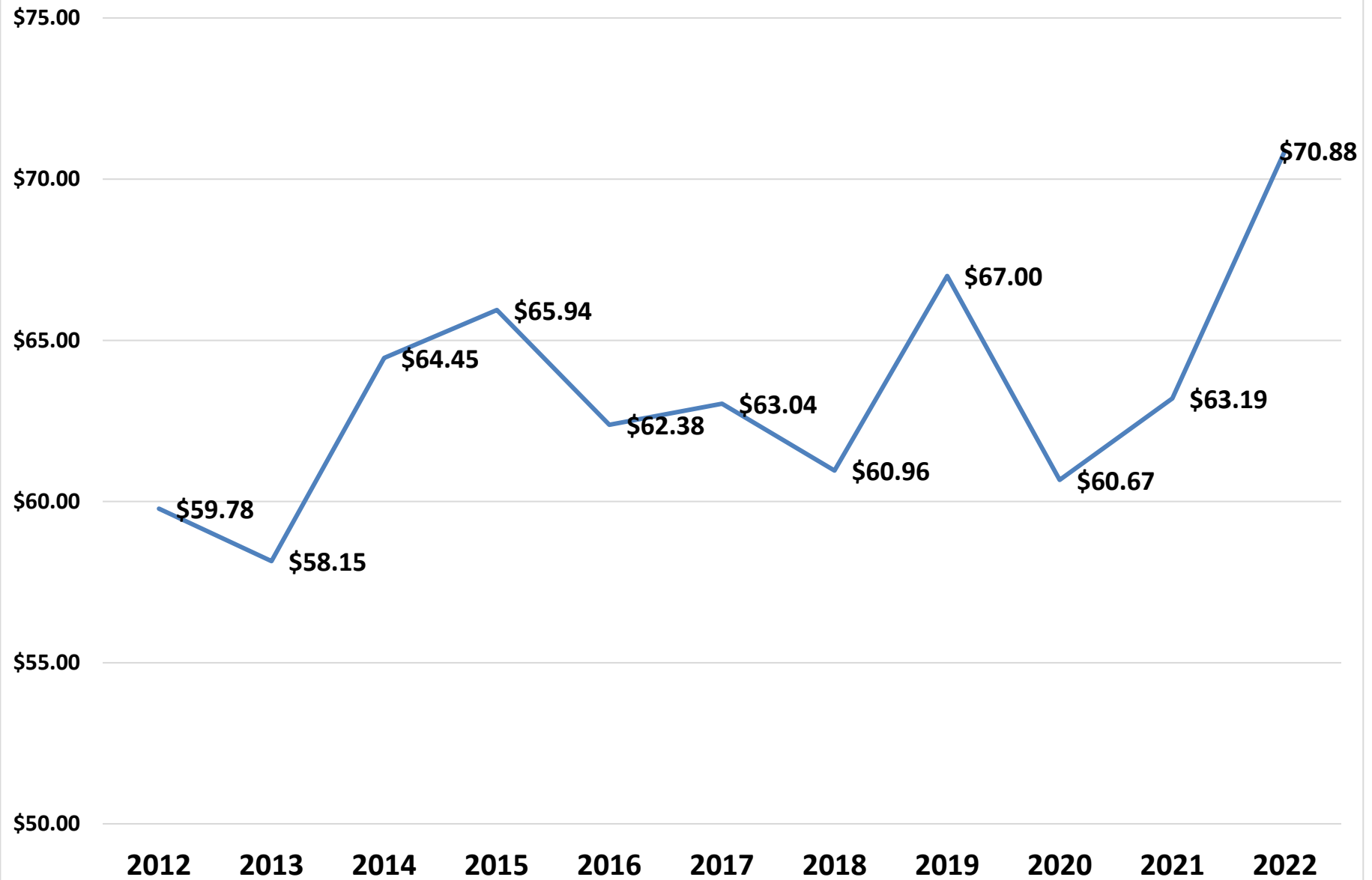
20-21 bdgt amount **\$63.31**
BDGT Year to Date **\$66.35**

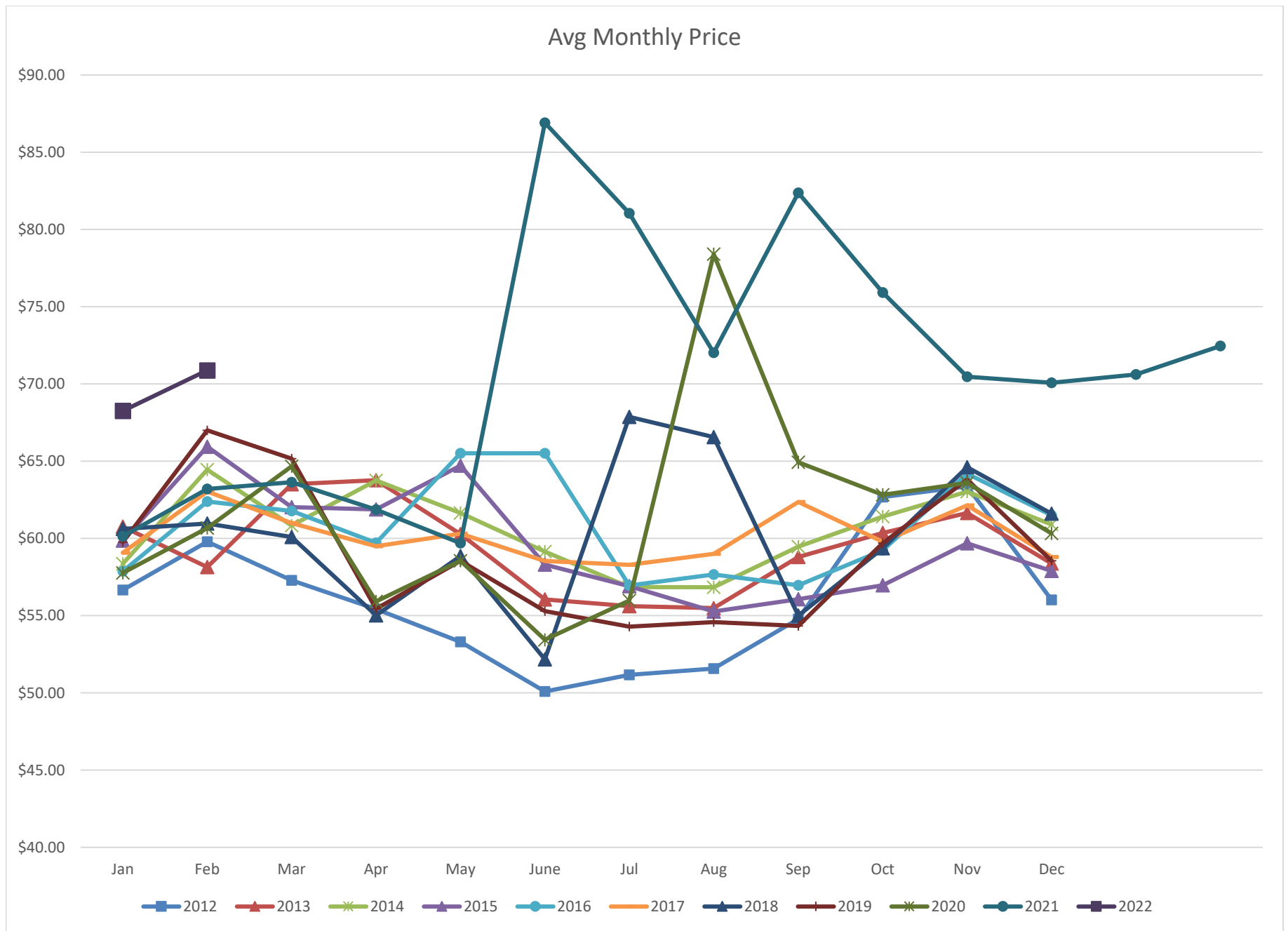
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<i>Jan</i>	\$56.66	\$60.76	\$58.36	\$59.86	\$57.87	\$59.07	\$60.62	\$59.75	\$57.76	\$60.14	\$68.25
<i>Feb</i>	\$59.78	\$58.15	\$64.45	\$65.94	\$62.38	\$63.04	\$60.96	\$67.00	\$60.67	\$63.19	\$70.88
<i>Mar</i>	\$57.28	\$63.50	\$60.83	\$62.03	\$61.77	\$60.99	\$60.09	\$65.17	\$64.67	\$63.64	
<i>Apr</i>	\$55.43	\$63.77	\$63.75	\$61.88	\$59.71	\$59.49	\$55.02	\$55.44	\$55.92	\$61.86	
<i>May</i>	\$53.31	\$60.28	\$61.64	\$64.71	\$65.51	\$60.32	\$58.86	\$58.55	\$58.55	\$59.69	
<i>June</i>	\$50.09	\$56.05	\$59.15	\$58.30	\$65.51	\$58.54	\$52.17	\$55.30	\$53.44	\$86.91	
<i>Jul</i>	\$51.16	\$55.62	\$56.85	\$56.91	\$56.95	\$58.29	\$67.87	\$54.29	\$55.98	\$81.04	
<i>Aug</i>	\$51.57	\$55.49	\$56.84	\$55.27	\$57.67	\$59.00	\$66.55	\$54.58	\$78.40	\$72.03	
<i>Sep</i>	\$54.79	\$58.80	\$59.46	\$56.06	\$56.97	\$62.36	\$55.00	\$54.34	\$64.93	\$82.38	
<i>Oct</i>	\$62.68	\$60.35	\$61.42	\$56.97	\$59.23	\$59.79	\$59.36	\$59.70	\$62.82	\$75.92	
<i>Nov</i>	\$63.37	\$61.65	\$63.03	\$59.68	\$64.18	\$62.14	\$64.60	\$63.80	\$63.60	\$70.47	
<i>Dec</i>	\$56.02	\$58.37	\$60.91	\$57.90	\$61.51	\$58.80	\$61.61	\$58.55	\$60.33	\$70.07	
<i>Yr Avg</i>	\$56.01	\$59.40	\$60.56	\$59.63	\$60.64	\$60.15	\$60.23	\$58.87	\$61.42	\$70.61	\$69.57
<i>Weighted Avg</i>	\$55.22	\$58.80	\$60.34	\$58.99	\$59.55	\$59.90	\$60.56	\$58.11	\$61.98	\$72.46	\$69.49

**Cy to
Date**

These figures capture the total cost of power to the power department. The power department uses costs only associated with the purchasing and generation of power and includes debt payments and interest associated with power resources.

Feb





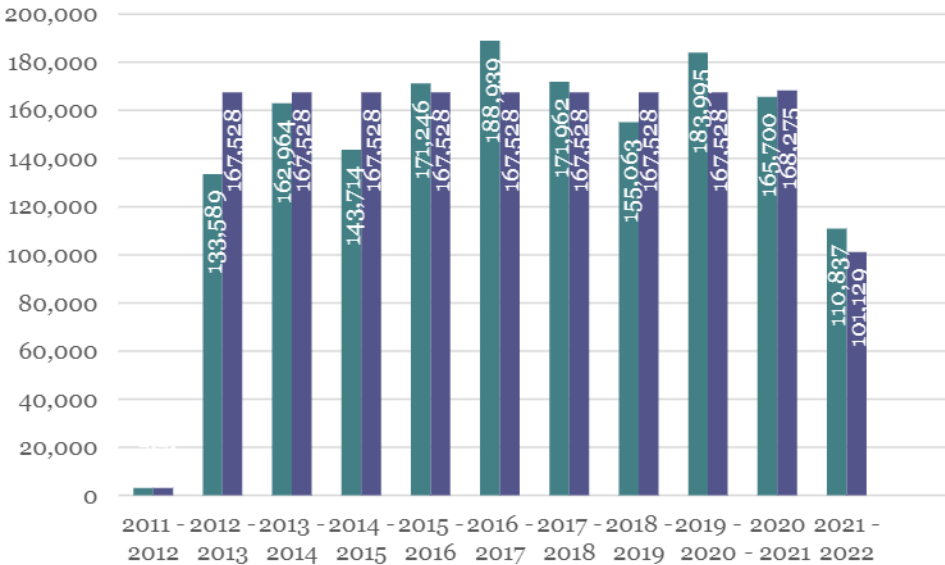
Everything after
this point is just
informational. The
following
information will
not be presented
as part of an
agenda item.

Horse Butte Wind Project

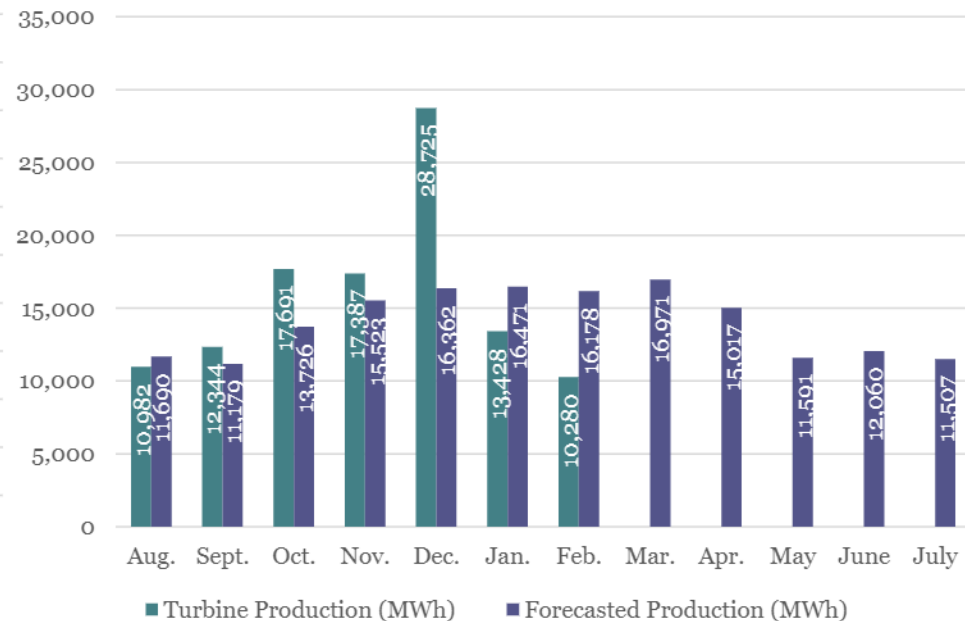
2022 – March Project Update

Production - Lifetime / Rolling 12 Months

Lifetime Production (MWh)



Production (MWh)



Balance of Plant

- Substation
 - Substation, Snowcat, O&M Building
 - Substation – VOB Backup Battery Replacement.
 - Snowcat Repairs – Axle and Hydraulic Repairs; Four Foam filled Tires Replaced.
 - O&M Building – Office Area Painting Completed; Defective outside light fixture replaced.

VOB Backup Battery Replacement



Snowcat Repairs



Snowcat Repairs



Snowcat Repairs



Snowcat Repairs



Rental Side-by-Side



O&M Building Painting Update

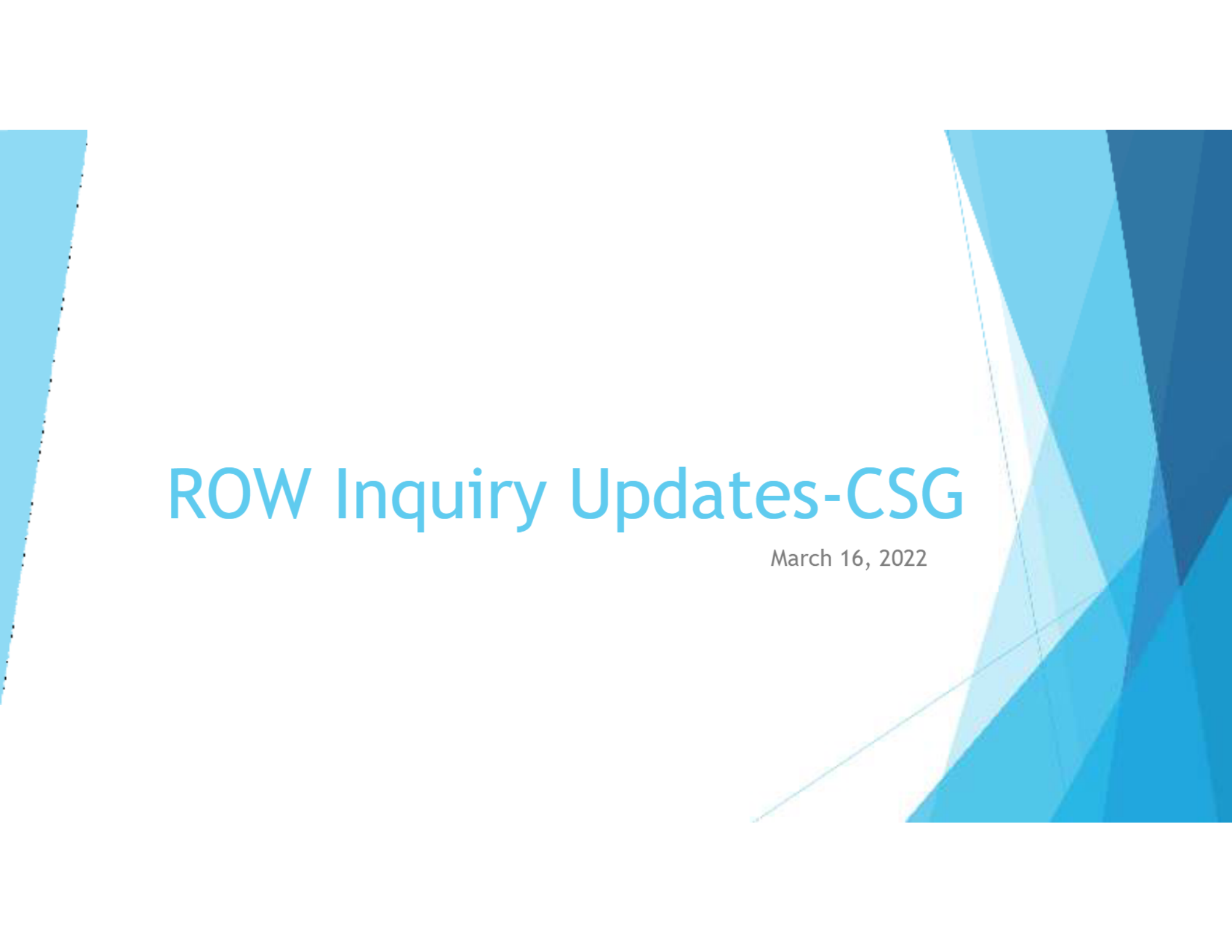


Outside O&M Lights



COVID 19 Update

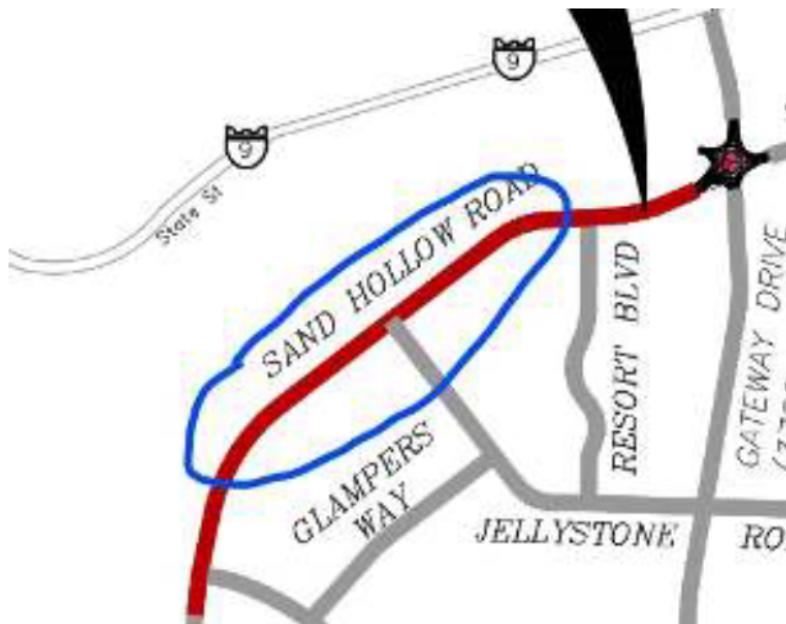
- Following CDC guidelines, with Vestas maintaining POD segregation with level 2a. Continuing extensive office area cleaning, sterilization measures and protection to include N95 Masks.
- Vestas commenced 10-year maintenance cycle on March 2nd.

The background of the slide features abstract blue geometric shapes. On the left, a light blue triangle points upwards. On the right, a complex arrangement of overlapping triangles in various shades of blue (from light to dark) creates a dynamic, modern look.

ROW Inquiry Updates-CSG

March 16, 2022

New Hurricane Development Along Sand Hollow Road



- ▶ ICPE is evaluating the new plans
- ▶ New plans do not move the existing line
- ▶ One area with a pole in the island between both directions of traffic

Ash Creek Sewer Project

- ▶ Waiting on blasting plans and insurance documents from Ash Creek
 - ▶ Then UAMPS can sign the agreement extension

Walmart Retaining Wall Project in Washington



- ▶ The new retaining wall was projected to cost \$4 million
 - ▶ 20% of the entire project
- ▶ Walmart decided against the new retaining wall
 - ▶ Our ROW and transmission line will no longer be affected

Payson Project February 2022



February Plant Statistics

- **Equiv. Availability Factor** **100.0%**
- **Net Plant Heat Rate** **8499 Btu/kWh**
- **Net Capacity Factor** **36.92%**
- **CTG Starts** **17**
- **Days Plant Ran** **19**
- **Hours of Operations** **355.72**
- **Average Hours/Day** **17.79**
- **Average Plant Load** **96.38**
- **Total Net MWh Output** **34,285**

Some Project/Maintenance Related Items.

- Steam Seal block valve leaking steam needs replaced during upcoming outage in April.
- Pre-Cooler on HP Steam sample line was found to have leaking steam tubing. Cooler was replaced.
- Pressure Regulator on MMF (Multi-Media Filter) was found to have a damage / cracked fitting. Fitting Replaced.
- GT APU water trap was replaced. Unit has not been operating properly. Rebuild kit was also purchased to rebuild old unit to have operational spare on shelf.
- ST Lube Oil Dehydration unit placed back into service. This is due to the increasing amount of moisture found in Lube oil.
- Cooling Tower Nozzle was reattached after blown off during operation.
- Two water level probes were replaced on drums, on HRSG.
- GT inlet temperature / humidity probe was replaced.
- Cooling Tower (Culinary) makeup line was found to have hole in piping. Piping was found to be eroded away to near paper-thin wall. Section of pipe was removed and built back up with a patch of steel and weld. New section of piping is being ordered for replacement during Spring Outage.
- steam Jet Ejector – Steam Valve was not operating properly. It was found to have a faulty solenoid valve. Solenoid valve was replaced, and valve was put back into operation.
- steam Turbine Hydraulic Pump B was replaced. Pump could no longer maintain enough operating pressure. Pump will be sent off for rebuild.
- New / additional conductors were pulled in Steam Turbine building to install future VFD on Vapor Extractor motor. On Steam Turbine Lube oil system.

Small Tube Leak found





Upcoming Outage targets.

Major Maintenance Highlights/Expenses.

Company	PO# Amount	PO# Date	Work/Parts Arrival Date	Description	Anticipated invoice/Paid
Emerson	\$234,587.10	2/28/22	2/28/22	Final Payment for DCS Upgrade	\$234,587.10
VRC Protx	\$4471.0	2/2/22	2/23/22	HRSG PRV Testing	\$4471.0
VIP LLC	\$13,474.00	2/17/22	3/12/22	Spring Outage Scaffold	\$13,474.00
GE International	\$142,115.62	2/24/22	10/3/22	Fall Outage Parts	\$142,115.62
Codale Electric	\$19,520.69	2/17/28	4/4/22	Spring Outage Electrical Bucket for Aux Boiler Feed Pump	\$19,520.69

Safety/Regulatory Items.

- HRSG PSV annual testing completed
- Vivid Safety Training continues

Executive summary February:

	February 2022			Fiscal Year End		
	Actual	Budget	Variance	Actual	Budget	Variance
Plant Starts	17	12	5	151	139	12
Avg. On-line hours	17.79	18	(0.21)	17.70	17	0.70
CTG On-line hours	355.72	270.00	85.72	5185.10	4022.00	1,163.10
Average Plant Load	91.88	96	(4.12)	104.48	105	(.52)
Net MWH's Produced	32,684	26,000	6,684	571,220	435,800	135,420
Net Capacity Factor	35.19%	25.79%	9.40%	52.09%	36.07%	16.02%
Availability	99.81%	97.00%	2.81%	85.75%	92.36%	-6.61%
Net Heat Rate	8,501	8,500	(1)	8,597	8,500	97
MMBTU's Consumed	277,836	221,000	56,836	4,889,298	3,704,300	1,184,998