Exh. DCG-3
Dockets UE-190334, UG-190335, and UE-190222
Witness: David C. Gomez

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **AVISTA CORPORATION, d/b/a AVISTA UTILITIES,** **Respondent.**	**DOCKETS UE-190334, UG-190335, and UE-190222 (*Consolidated*)**

EXHIBIT TO TESTIMONY OF

David C. Gomez

STAFF OF WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Email Communication Dempsey/Thackston
CS2 Transformer Update (February 22, 2019)

October 3, 2019

From: Mecham, Mike
To: Andrews, Liz; Brandkamp, Bob; Brandon, Annette; Brandon, Garth; Bryan, Todd; Dempsey, Tom C; Farmer, Glen; Follini, Robert; Graham, Jason; Hamilton, Lori; Kinney, Scott; Magruder, Mike; Nichols, David; Santman, Ken; Thackston, Jason; Vickers, Andy; Wilson, Craig; Wilson, Scott
Subject: CS2 Transformer Update 2/22/2019
Date: Friday, February 22, 2019 11:34:52 AM
Attachments: image005.jpg
image006.png
image007.gif
image008.jpg
image009.jpg
image010.jpg
image001.jpg

T#4

Coyote Springs 2 remains limited to a maximum of 250MW de-rate. The online oil analyzer reliability remains in question with lower numbers being reported when compared to the manual oil samples. A Serveron representative has been evaluating and is planning a site visit next week for potential repairs. We continue to pull manual oil samples twice per week and are attempting to forecast the gassing increase (see table below). Please note that the yellow 'caution' boxes for Ethylene and Hydrogen indicated on the chart are strictly caution limits for forecast purposes, it doesn't mean a shutdown is imminent or required once those points are reached. With the current trending we are anticipating filtering the transformer oil during our scheduled Annual Maintenance in May.

T#3

Siemens has provided a *budgetary* number for a direct replacement of the GSU same design as the one currently in use, along with a 66 week lead time for delivery; awaiting a budgetary number from Hyundai for the same.

Requested Siemens to provide an estimate as soon as possible for costs and time needed for a factory repair of T#3.

Other:

On Tuesday, Feb 26 David Nichols will have a Coyote Springs site visit with Black and Veatch contractors to further discuss the single phase Generator Step Up transformer viability analysis. This analysis and report is expected to be completed the end of March.

Mike

Mike Mecham
Thermal Operations Manager

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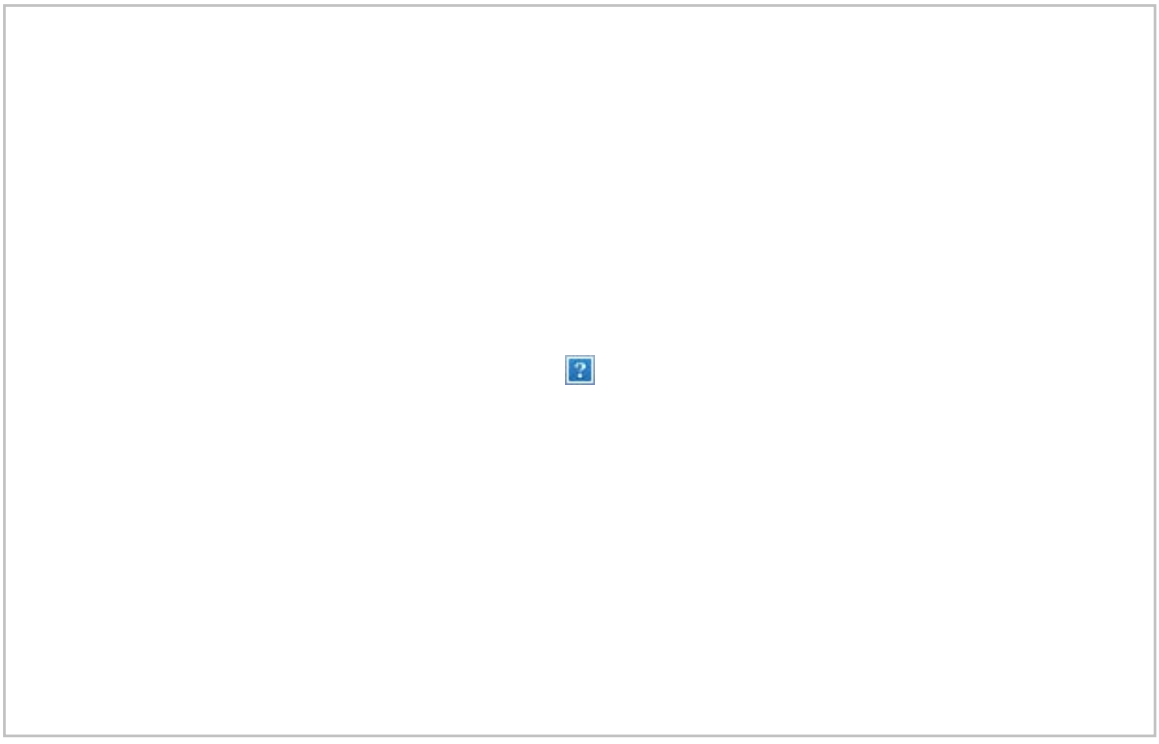
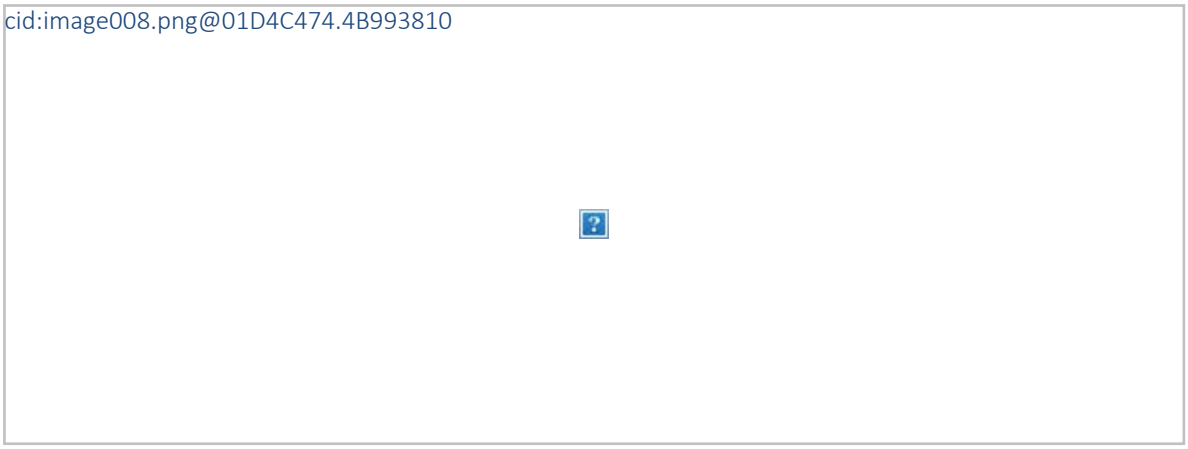
From: Mecham, Mike
Sent: Friday, February 15, 2019 2:31 PM
To: Andrews, Liz <Liz.Andrews@avistacorp.com>; Brandkamp, Bob <Bob.Brandkamp@avistacorp.com>;

Brandon, Annette <Annette.Brandon@avistacorp.com>; Brandon, Garth <Garth.Brandon@avistacorp.com>; Bryan, Todd <todd.bryan@avistacorp.com>; Dempsey, Tom C <Tom.Dempsey@avistacorp.com>; Farmer, Glen <Glen.Farmer@avistacorp.com>; Follini, Robert <Robert.Follini@avistacorp.com>; Graham, Jason <Jason.Graham@avistacorp.com>; Hamilton, Lori <Lori.Hamilton@avistacorp.com>; Kinney, Scott <Scott.Kinney@avistacorp.com>; Magruder, Mike <Mike.Magruder@avistacorp.com>; Nichols, David <David.Nichols@avistacorp.com>; Santman, Ken <Ken.Santman@avistacorp.com>; Thackston, Jason <jason.thackston@avistacorp.com>; Vickers, Andy <andy.vickers@avistacorp.com>; Wilson, Craig <Craig.Wilson@avistacorp.com>; Wilson, Scott <scott.wilson@avistacorp.com>
Subject: CS2 Transformer Update 2/15/2019

T#4
Coyote Springs continues to operate at a de-rate of 250MW maximum, there are no plans to increase above the 250MW at this point, all cooling fans are in AUTO and currently off. There are some discrepancies between the online gas in oil analyzer (Serveron) and the manual oil samples; the Serveron indicates a lower amount of gassing than what the manual samples are indicating. We continue to discuss with Serveron thoughts and verification options for the equipment. Because of this, we are pulling two manual samples/week to ensure gassing is verified. The gassing has continued to increase slightly at the 250 MW operating limit (both the Serveron trend and most recent manual oil sample analysis attached).

T#3
We've received an internal inspection report from Siemens and are currently reviewing and needing additional clarification from Siemens on their recommendations. They (Siemens) are preparing budgetary costs options for steps forward for further inspection, tear down, repair (both on site and remote), or replacement. Additionally, Black and Veatch is under contract to help analyze options for replacement options as well.





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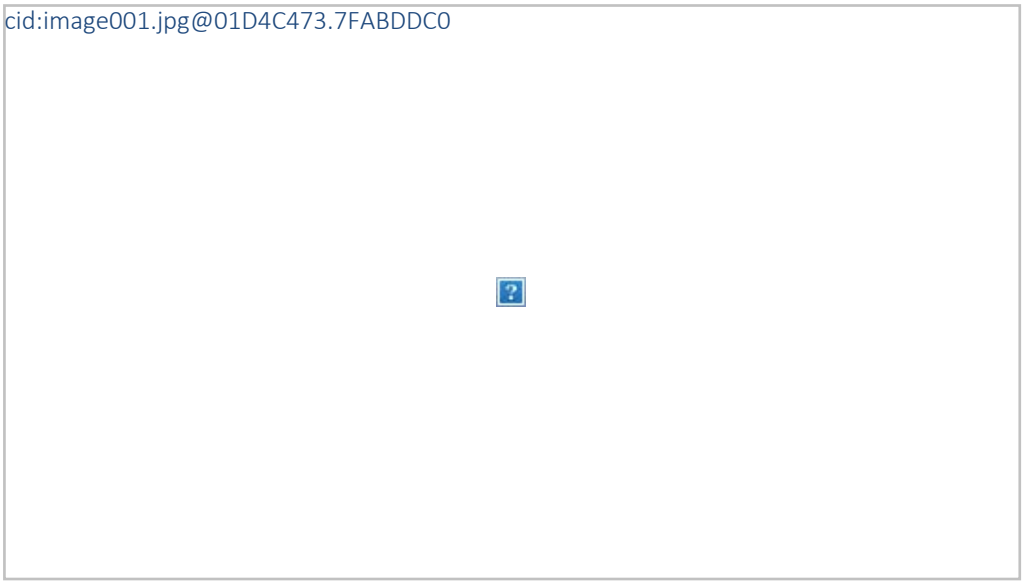
From: Mecham, Mike
Sent: Monday, January 28, 2019 8:11 PM
To: Andrews, Liz <Liz.Andrews@avistacorp.com>; Brandkamp, Bob <Bob.Brandkamp@avistacorp.com>; Brandon, Annette <Annette.Brandon@avistacorp.com>; Brandon, Garth <Garth.Brandon@avistacorp.com>; Bryan, Todd <todd.bryan@avistacorp.com>; Dempsey, Tom C <Tom.Dempsey@avistacorp.com>; Farmer, Glen <Glen.Farmer@avistacorp.com>; Follini, Robert <Robert.Follini@avistacorp.com>; Graham, Jason <Jason.Graham@avistacorp.com>; Hamilton, Lori <Lori.Hamilton@avistacorp.com>; Kinney, Scott <Scott.Kinney@avistacorp.com>; Magruder, Mike <Mike.Magruder@avistacorp.com>; Nichols, David <David.Nichols@avistacorp.com>; Santman, Ken <Ken.Santman@avistacorp.com>; Thackston, Jason <jason.thackston@avistacorp.com>; Vickers, Andy <andy.vickers@avistacorp.com>; Wilson, Craig <Craig.Wilson@avistacorp.com>; Wilson, Scott <scott.wilson@avistacorp.com>
Subject: CS2 Transformer Update 1/29/2019

T#4
Coyote Springs 2 generation de-rate was increased to 250 MW on Wednesday, 1/23/2019 due to the non-increasing gassing trend when holding 225 MW; all cooling fans are on in manual. We will continue evaluating the gassing trends over the next several weeks and discuss options with Power Supply prior to making any future determination on the load de-rate. There was a noticeable step decrease in the dissolved gas analysis from the Serveron data shortly following the load increase to 250 MW. We have been in contact with Serveron for consultation on the reason this may have occurred; another manual oil sample will be taken tonight for a lab

analysis to verify the Serveron numbers.

T#3
An internal inspection was performed by Siemens on 1/23 with video taken of the accessible locations. The initial review by Siemens, along with Avista management, Engineering, and PGE management, resulted in no new revelations, nothing evident that shows what may have caused the gassing increase and Buckholz relay action. Siemens will finalize review of the video before finalizing a report, and provide estimates for various options for further investigation to find the failure that caused the gassing.



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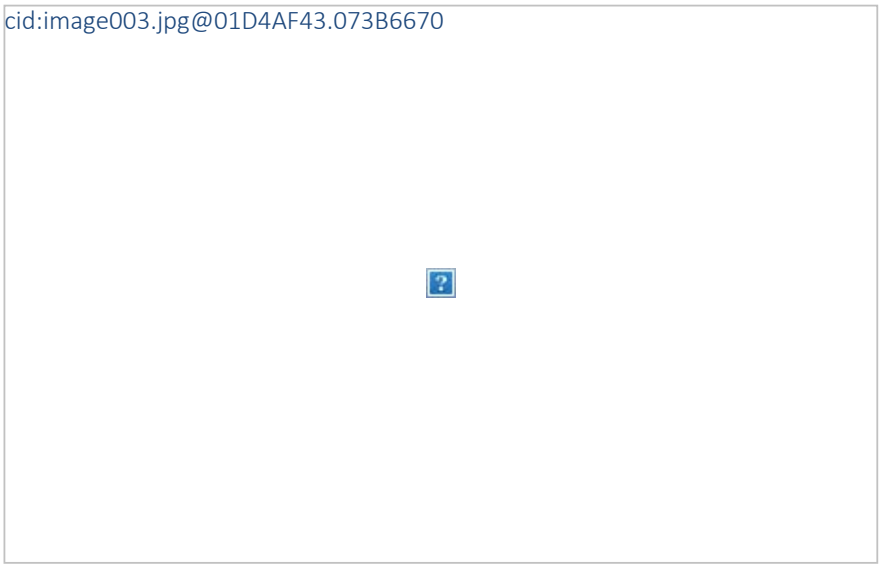
From: Mecham, Mike
Sent: Friday, January 18, 2019 3:33 PM
To: Brandkamp, Bob <Bob.Brandkamp@avistacorp.com>; Brandon, Garth <Garth.Brandon@avistacorp.com>; Bryan, Todd <todd.bryan@avistacorp.com>; Dempsey, Tom C <Tom.Dempsey@avistacorp.com>; Farmer, Glen <Glen.Farmer@avistacorp.com>; Follini, Robert <Robert.Follini@avistacorp.com>; Kinney, Scott <Scott.Kinney@avistacorp.com>; Magruder, Mike <Mike.Magruder@avistacorp.com>; Nichols, David <David.Nichols@avistacorp.com>; Santman, Ken <Ken.Santman@avistacorp.com>; Thackston, Jason

<jason.thackston@avistacorp.com>; Vickers, Andy <andy.vickers@avistacorp.com>; Wilson, Craig <Craig.Wilson@avistacorp.com>; Wilson, Scott <scott.wilson@avistacorp.com>
Subject: CS2 Transformer Weekly Update 1/18/2019

The Coyote Springs 2 generation was increased to 225 MW on Tuesday, January 15 to analyze the gassing at a slightly higher generation (gassing and load trend below). The current plan is to remain at a maximum de-rate of 225 MW until early February. We are closely monitoring the transformer winding and oil temperatures and currently have half of the cooling fans on in manual – oil and winding temperatures currently operating around 50 degrees C.

On Wednesday, January 23, Siemens will be on site for an internal inspection of Transformer #3. Avista management and engineering will be there for the inspection and discussion.



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From: Mecham, Mike
Sent: Friday, January 11, 2019 2:33 PM
To: Brandkamp, Bob <Bob.Brandkamp@avistacorp.com>; Brandon, Garth <Garth.Brandon@avistacorp.com>; Bryan, Todd <todd.bryan@avistacorp.com>; Dempsey, Tom C <Tom.Dempsey@avistacorp.com>; Farmer, Glen

<Glen.Farmer@avistacorp.com>; Follini, Robert <Robert.Follini@avistacorp.com>; Kinney, Scott <Scott.Kinney@avistacorp.com>; Magruder, Mike <Mike.Magruder@avistacorp.com>; Nichols, David <David.Nichols@avistacorp.com>; Santman, Ken <Ken.Santman@avistacorp.com>; Thackston, Jason <jason.thackston@avistacorp.com>; Vickers, Andy <andy.vickers@avistacorp.com>; Wilson, Craig <Craig.Wilson@avistacorp.com>; Wilson, Scott <scott.wilson@avistacorp.com>
Subject: CS2 Transformer Weekly Update 1/11/2019

All,
Due to the current status of the GSU situation at Coyote Springs 2, the GPSS group will strive to send out a weekly update to keep interested parties apprised of the progress/work that has occurred during the week. Although this will be kept at a fairly high level, and some information may be repetitive, we will do our best to be as comprehensive in our information as possible. This update view may be modified at a later date.

T4

- Plant remains available and on line, de-rated to a Maximum 200 MW. Plant can be operated at a lower generation or be removed from service as Power Supply deems it necessary.
- The transformer gassing has leveled out over the past 6 – 7 days (graph attached below). Ethylene and Acetylene periodically will spike to the IEEE Condition 1 alert point, we will continue to monitor the gassing characteristics closely while at 200 MW.
- Still working on the specifics of getting/utilizing the loaner oil filtering trailer from Hermiston Gen Station, should this be the direction we choose. The total filtering flow capacity may make this an impractical option.
- North American Substation Support is working on providing options for filtering services when necessary.
- Avista crews will conduct Electrical Testing during the Coyote Springs 2 Steam Turbine overhaul that occurs in May – June of this year.

T3

- 1/23 – 24, Siemens on site for inspection. GPSS engineering will monitor and discuss current status and options with Siemens group while on site.
- Following inspection, compare costs and accuracy of tear down on-site vs shipping to factory. Factory tear down has a greater probability of discovering where the issue originated.
- Awaiting estimated transportation costs to OEM factory in Sau Paulo, Brazil from two sources, expect

this to be available by mid-January.

- Received the Condition Assessment report from Pierre Feghali, the contracted transformer consultant. High level recommendations are 1:) replace the Carbon Steel top to eliminate the eddy current issues 2:) Verify tank shields grounding on the L.V. side tank wall and 3:) tighten the key spacer blocks on top of all windings and around the winding circumference. NOTE: Still no determinable cause noted for the spike in H2 and Acetylene that caused the Buchholz relay to remove the unit from service.

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