

Overview Map of Route 29

> PUCT 41606 SOAH 473-13-5207 Exhibit JRD-RA-2 Page 1 of 1



Overview Map of Route 32

> PUCT 41606 SOAH 473-13-5207 Exhibit JRD-RA-3 Page 1 of 1

Routing Factor Analysis NORTH EDINBURG TO LOMA ALTA 345-kV TRANSMISSION LINE PROJECT **Routing Factor Data - Created with Individual Link Data**

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12.	11.	10.	9.	8a.	8.	7a.	7.		6.	5	4.	3.	2a.	2	1.					
12. Total number of interventions on noticed links (based on review of PUCT 41606 interventions)	Length NOT parallel to existing tranmsision line ROW, other existing ROW, or apparent property lines (Line 4 - Line 5 - Line 6)	10. Length NOT parallel to existing transmission line ROW or other existing ROW (Line 1 - Line 4 - Line 5)	9. Length NOT parallel to existing transmission line ROW (Line 1 - Line 4)	8a. Capped Length Based Cost Estimate (Minimum of Line 8 and \$352.23 million)	8. Length Based Cost Estimate in Millions (Length times average cost of \$3.23 million per mile)	7a. ETT/Sharyland Cost Estimate in Millions (Joint Applicants' Reponses to Rhodes 4th RFI) ⁵	7. ETT/Sharyland Cost Estimate in Millions (Attachment 5 of Application)	Additional Contractory is a second	Length of ROW parallel to apparent property lines ³	5. Length of ROW parallel to other existing ROW (highways, pipelines, railways, canals, etc.)	4. Length of ROW parallel to existing transmission line ROW	3. Number of habitable structures ¹ potentially to be relocated/removed ²	2a. Number of habitable structures ¹ within 500 feet of ROW centerline (Double Counting Removed)	2. Number of habitable structures ¹ within 500 feet of ROW centerline (Includes Double Counting)	1. Length of alternative route	tind tree	Evaluation Criteria	Exit from North Edinburg:	Route Description:	
103	25.5	42.8	93.9	\$352.23	\$352.88	#N/A	\$356.34		17.3	51.1	15.3	5	1,153	1,355	109.2		Route 29	Eastern	Filed Routes	
108	30.5	48.8	92.8	\$352.23	\$379.78	#N/A	\$352.23		18.3	44.0	24.8	1	465	546	117.5		Route 32	Western	outes	
102	22.4	38.9	89.2	\$350.58	\$350.58	\$349.25	#N/A		16.5	50.3	19.3	5	914	938	108.5		Route BAI -1	Eastern	Routes Not Noticed Lir Proximi	T NOJECT
106	30.6	47.3	93.2	\$352.23	\$370.54	\$369.21	#N/A		16.6	46.0	21.4	1	337	391	114.7		Route BAI -2	Western	Routes Not Filed Using Noticed Links & Inside Proximity Circle	
51	18.6	31.0	70.1	\$279.01	\$279.01	\$277.79	#N/A		12.5	39.0	16.3	5	711	727	86.3		Route BAI -3	Eastern	Route Not Filed Using Noticed Links & Outside Proximity Circle	
514	19.0	31.3	71.5	\$287.90	\$287.90	#N/A	#N/A		12.3	40.2	17.6	0	#N/A	446	89.1		Route BAI -4	Eastern	Routes Not Unnoticed Lint Proximi	
184	13.5	25.5	63.8	\$249.20	\$249.20	#N/A	#N/A		12.0	38.3	13.4	0	#N/A	335	77.1		Route BAI -5	Eastern	Routes Not Filed With Unnoticed Links & Outside of Proximity Circle	

¹Single-family and multi-family dwellings, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, or urches, hospitals, nursing homes, and schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 500 feet of the centerline of a transmission project of 230 kV or more

²ETT and Sharyland will potentially relocate/remove habitable structures within 75ft of the centerline

³Apparent property lines created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parafiel to property lines criteria.

⁴There is no intervention reflected for the unnoticed links used in these routes

⁵In Rhodes RFI No 4-1 ETT-SU Attachment 1, Route BAI-1 was referred to as Route 4-2, Route BAI-2 referred to as Route 4-1, and Route BAI-3 was referred to as Route 4-3

Route 1	
	134-135-137a-137b-138-141-145-146-151-154-159-161-164-168-169-184-178-173b-172-170b-352-118c-116-117-119-121-130-186-350-188b-196a-196b-204-215-217-216-218-223-224-227-231-237-241-
Koute 29	250-252-254-264-271-286-287-294-297-299-317-318-332-333
	1.4.7.10.17.26.32.33.43.45.51.48.54.56.60.64.342.71a.71b.75.78.81.82.83.85a.85c.84b.84c.87.89.92.94.96.97.105.107.114.117.116.118a.118c.125a.125b.128.175.179.185.187a.187b.196a.196b.200-203-
ZC atnow	212-214-219-226-233-235-256-258-265-271-270-269-268-267-274-277-304-305-312-313-357-339-341
	134-135-137a-137b-138-141-147-152-155-162-165-169-184-178-173b-173a-171-170a-352-118c-116-117-119-121-130-180-186-349b-187a-187b-196a-351a-351b-196c-194-201-210-221-223-225-230-233-
Route DAI -1	234-240-243-249-255-265-286-287-294-297-299-317-318-331
	1.4.7-10-17-26-32-33-43-45-51-48-54-56-60-64-342-71a-71b-75-78-81-82-83-85a-85c-84b-84c-87-89-92-94-96-97-105-107-114-117-116-118a-118c-125a-125b-128-175-179-185-187a-187b-196a-351a-351b-193c-145-145-145-145-145-145-145-145-145-145
VOILE DAI -2	194-201-210-221-223-225-230-233-234-240-243-249-255-265-286-287-294-297-299-317-318-331
Route BAI -3	Route BAI -3 134-135-137a-137b-138-141-147-152-155-162-165-169-193a-349a-187b-196a-351a-351b-193c-194-201-210-221-223-225-230-233-234-240-243-249-255-265-286-287-294-297-299-317-318-331
Route BAI -4	Route BAI -4 134-135-137a-137b-138-141-147-152-155-162-165-168-169M-193a-349a-187b-196a-351a-351b-193c-194-201-210-221-223-225-230-233-234-240-243-249-255-265-286-287-294-297-299-317-318-331
Route BAI -5	Route BAI -5 134-135-1376-137b-Canal-221-223-225-230-233-234-240-245-265-286-287-294-297-299-317-318-331





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PUCT 41606 SOAH 473-13-5207 Exhibit JRD-RA-9 Page 1 of 1

SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606

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UINT APPLICATION OF ELECTRIC
TRANSMISSION TEXAS, LLC AND
HARYLAND UTILITIES, L.P. TO
MEND THEIR CERTIFICATES OF
CONVENIENCE AND NECESSITY
OR THE PROPOSED NORTH
DINBURG TO LOMA ALTA
OUBLE-CIRCUIT 345-KV
RANSMISSION LINE IN HIDALGO
ND CAMERON COUNTIES, TEXAS

BEFORE THE STATE OFFICE

OF

ADMINISTRATIVE HEARINGS

ELECTRIC TRANSMISSION TEXAS, LLC AND SHARYLAND UTILITIES, L.P.'S RESPONSE TO RHODES, ML RHODES, LTD., AND RHODES ENTERPRISES, INC.'S FIRST REQUEST FOR INFORMATION

Question No. Rhodes RFI No. 1-16:

Please refer to the Direct Testimony of Sharyland witness Mr. Caskey at pages 14 through 16 and 24 as well as Exhibit MEC-2. Please explain whether or not ETT and Sharyland have confirmed that their proposal to route the line within the Figure MEC-2 proximity circle rather than to South McAllen substation is acceptable to ERCOT.

Response No. Rhodes RFI No. 1-16:

No, Joint Applicants do not believe it is necessary to confirm with ERCOT that routing the line within the proximity circle shown in Exhibit MEC-2 is acceptable. ERCOT recommended that the project be "routed in proximity to" the South McAllen substation. ERCOT Endorsement Letter, Attachment 6 to the Application at 1; ERCOT Independent Review, Attachment 6 to the Application at 29. ERCOT's recommendation did not include an interconnection to the South McAllen substation, and Joint Applicants therefore believe the phrase "in proximity to" requires only that the line be routed near the South McAllen substation, in expectation of a future potential interconnection to the substation. Please see Mr. Caskey's testimony at pages 23 and 24 for the design criteria used in routing the project in proximity to the South McAllen substation.

Prepared By: Mark Caskey Sponsored By: Mark Caskey

Title: President, Sharyland Utilities, L.P. Title: President, Sharyland Utilities, L.P.

Page 1 Page 1 SOAH DOCKET NO. 473-13-5207 PULDOCKET NO. 41606 APPEARAGE PULDOCKET NO. 41606 Internet Source PulDOCKET NO. 41606 JORT APPLICATION OF) STATE OFFICE OF ELECTRIC TANSMISSION 1 TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND NEEDS IT OCONVENENCE AND DISCRATION (CONSTRUCT A TOWNERD, FC PulDOCKET NO. 510, 100, 100, 100, 100, 100, 100, 100,		Page 1
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IN HIDALGO AND CAMERON) COUNTES, TEXAS) ADMINISTRATIVE HEARINGS ORAL DEPOSITION JEFF BILLO August 29, 2013 ORAL DEPOSITION OF DEFF BILLO, produced as a wintees at the instance of the Landowner represented by mail. Your and duty sworn, was taken in the above-styled and numbered cause on August 29, 2013, from 1:33 p.m. to 4:22 p.m., before Kim Pence, Certified 133 p.m. to 4:22 p.m., before Kim Pence, Certified 133 p.m. to 4:22 p.m., before Kim Pence, Certified 7620 Metro Certer Drive, Room 168, Austin, Teras 7874, pursuant to the Texas Reliability Council of Texas, 76702 Metro Certer Drive, Room 168, Austin, Teras 7870 Page 2 Page 2 Page 4 APPEARANCES 2 1 2 Page 4 2 13 Page 5 2 14 15 15 16 16 17 18 19 19 19 19 10 10 12 14 15 16		CAMPBELL AND ANTHONY E. GRAY:
COUNTIES, TEXAS) ADMINISTRATIVE HEARINGS 0RAL DEPOSITION JEFF BILLO August 29, 2013 1 0RAL DEPOSITION OF JEFF BILLO, produced as a witness at the instance of the Landowners represented by mr. Mechano, and duty syron, was taken in the above-styled and numbered cause on August 29, 2013, from 1/35 put in ad for the State OT Cass, reported by computerized standyper machine at the offices of the Heart Refer Kim Prece, Carified Shorthand Reports II, advise of Civi Procedure and the provisions stated on the record or attached hereto. Page 2 1 PARAMIN, Tess 7710, 3326 AMERCHANCES 1		
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August 29, 2013 ORAL DEPOSITION OF JEFF BILLO, produced as a witness at the instance of the Landowners represented by Mr. Mediano, and daily sworn, was taken in the above-styled and numbered cause on August 29, 2013, from 13 by numbered cause on August 29, 2013, from 14 by contracting data strategies 15 by numbered cause on August 29, 2013, from 16 by comparison and for the State of Texas, 17 by frame and key and the state of Texas, 17 by frame and key and the state of Texas, 17 by frame and the state of Texas, 17 by frame and key and the state of Texas, 17 by frame and state and the state of Texas, 18 by the comparison and the state of Texas, 19 by frame and the state of	ORAL DEPOSITION	14 FOR ROBERT PAYNE:
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400 West 15th, Suite 1500Austin, Texes 787016Austin, Texes 787017remail: inhierta@dep.com7remail: inhierta@dep.com8- AND -9Mr. Mark Held (via telephone)Mr. Rery McOrah10DUGGINS, WREN, MANN & ROMERO, LLP60Congress Avenue, Suite 190011Austin, Texes 7870112email: news/res/10013FOR SHARYLAND UTILITIES:14Messrs, James Guy and John Scharbach15SUTHERLAND ASBELL & BRENNAN, LLP16GOC Congress Avenue, Suite 200017Telephone: 512.721.2700 - Fax: 512.721.265618- Falephone: 512.721.2700 - Fax: 512.721.265619- AND -20Ms. Alicia Right21SIMARYLAND UTILITIES, LP22600 Congress Avenue, Suite 2000Austin, Texes 7870123Telephone: 512.721.2700 - Fax: 512.721.265624SIARRYLAND UTILITIES, LP20Ms. Alicia Right21SIMARYLAND UTILITIES, LP22600 Congress Avenue, Suite 200023Telephone: 512.721.265624112 E Pecan Street, Suite 180025600 Congress Avenue, Suite 200026Ms. Alicia Right27Telephone: 512.721.265628600 Congres Avenue, Suite 200029Ms. Alicia Right20Ms. Alicia Right21SIMARYLAND UTILITIES, LP22600 Congres Avenue, Suite 200023Telephone: 512.721.2661 - Fax:		4 919 Congress, Suite 810
1 Telephone: 512,481.3323 - Fax: 512,481.4591 email: rerozier@dutglaw.com 7 email: junceru@deep.com 6 8 - AND - 7 9 Mr. Mark Held (via telephone) 7 Mr. Kerry McGrath 8 ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.: 10 DUGGINS, WREN, MANN & ROMERO, ILP 8 ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.: 11 Austin, Texas 78701 8 ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.: 11 FOR THE FAST STR 10 7 7 12 ermail: methol@dwmfaw.com 7 7 13 FOR SHARYLAND UTILITIES: 9 Austin, Texas 78701 14 Messra. James Guy and John Scharbach 10 FOR THOMAS, ET AL:: 14 Messra. James Guy and John Scharbach 11 FOR SHARYLAND UTILITIES: 13 14 Messra. James Guy and John Scharbach 12 SIMMONS, ET AL:: 13 16 GOC Congress Avenue, Suite 2000 15 Telephone: 512, 721, 2056 14 18 join scharbach@autherland.com 17 Telephone: 512, 721, 2056 16 19 - AND - <t< td=""><td></td><td></td></t<>		
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10 John. Scharberlagistinerland.com 17 PROPERTIES, LTD.: 19 - AND - 18 Mr. Rene Ruiz (via telephone) 20 Ms. Alicia Rigler COX.SMITH 21 SHARYLAND UTILITIES, LP 19 112 E. Pecan Street, Suite 1800 22 600 Congress Avenue, Suite 2000 San Antonio, Texas 78205 20 23 Telephone: 512.721.2661 - Fax: 512.721.2656 21 24 24 24		
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22 600 Congress Avenue, Suite 2000 20 Telephone: 210,354,3500 - Fax: 210,226,8595 Austin, Texas 78701 21 23 Telephone: 512,721,2661 - Fax: 512,721,2656 21 email: arigler@sharyland.com 23 24 24		San Antonio, Texas 78205
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KENNEDY REPORTING SERVICE, INC. 512.474.2233

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3	9/11/13 in an off-the-record discussion)	2	A No.
-	JEFF BILLO,	3	Q Okay. Mr. Billo, I'm going to am I saying
4	having been first duly sworn, testified as follows:	4	your name correctly?
5	EXAMINATION	5	A Yes.
6	BY MR. MEDRANO:	6	Q Okay. Mr. Billo, I'm going to have the court
7	Q Would you state your name, please?	7	reporter mark this document as Exhibit 1. I have some
8	A Jeff Billo.	8	copies of the documents I'll put here if the parties
9	Q Okay. Mr. Billo, my name is Andres Medrano. I	9	want them.
10	represent a number of landowners in this docket, and I'm	10	(Exhibit Billo No. 1 marked)
11	going to ask you some questions. In general, I want	11	Q (BY MR. MEDRANO) Do you recognize this
12	this to be a conversation. I'm not trying to do it as a	12	document?
13	cross-examination, and so please feel free to explain as	13	A Yes, I do.
14	fully as you think is necessary for the record.	14	Q And this is what is this document?
15	On occasion, I may ask you a question and	15	A This document is the report of the ERCOT
16	ask you for a yes or no. If you could give me a yes or	16	independent review of the Sharyland and BPUB Cross
17 18	no answer, I'd appreciate it, and then please feel free	17	Valley project.
19	to expand as much as you need to after that. Is that okay?	18	Q And were you a co-author on this report?
20	A Yes.	19	A Yes, I was.
20		20	Q Okay. I'm going to ask you a number of
22	Q Okay. To start, can you let us know your education and professional accreditations?	21	questions about this report if you want to follow along
23	A Sure. I have a Bachelor's of Science in	22	with me.
24	mechanical engineering from LeTourneau University. I	23	A Okay.
25	also have a Master's in Master's of Science in	24 25	Q To start, this review was conducted in 2011.
		25	Is that correct?
	Page 10		Page 12
1	electrical engineering from the University of Texas at	1	A That's correct.
2	Austin. I have been employed at ERCOT since January of		Q And this there have been no updates to the
3	2004 in the and the entire time in the planning	3	information in this report since 2011 is that
4	department.	4	correct that are incorporated in this document?
5 6	Q Are you a licensed engineer? A I am not.	5	A That's correct.
7		6	Q Okay. And is it your is it your
8	Q Okay. And what is your title at ERCOT? A I am the manager of transmission planning.	7	understanding or do you know if this document has been
9	Q And you said you've been there since when?	8	filed as a part of the application in this case?
10	A January of 2004.	9 10	A I do not know that.
11	Q Okay. And can you generally describe what your	11	Q Okay. Are you willing to accept it has been
12	job duties in that role are?	12	filed as part of the application? A Yes.
13	A Sure. My role is to oversee all of the	13	
14	transmission planning work at ERCOT. That includes	14	Q Okay. Thank you. I'm going turn to Page 10 of this report,
15	steady-state analysis for a time period of one to five	15	and I'm looking at Figure No. 8. This figure is labeled
-	and even up to ten and 20 years in the future. I also	16	Historical Maximum Daily Peak for 2010-2011 for
16	oversee our dynamic stability studies that we perform	17	Brownsville Area. Are you there?
16 17	for transmission planning. More specifically it's my	18	A Yes.
	job to ensure that we comply with the ERCOT protocols	19	Q Okay. To what extent were the 2011
17			
17 18		20	(Telephonic voice: Joining the meeting)
17 18 19	and planning guides as it relates to planning as well as the NERC TDL standards.	20 21	(Telephonic voice: Joining the meeting) MR. HERRERA: Angel Herrera, Jr
17 18 19 20	and planning guides as it relates to planning as well as the NERC TDL standards.		MR. HERRERA: Angel Herrera, Jr.
17 18 19 20 21	and planning guides as it relates to planning as well as the NERC TDL standards.	21	MR. HERRERA: Angel Herrera, Jr. Q (BY MR. MEDRANO) To what extent were 2011
17 18 19 20 21 22	 and planning guides as it relates to planning as well as the NERC TDL standards. Q Okay. Have you ever testified at the PUC the Public Utility Commission of Texas before? A Not not testify, no. 	21 22	MR. HERRERA: Angel Herrera, Jr. Q (BY MR. MEDRANO) To what extent were 2011 weather conditions incorporated into this review?
17 18 19 20 21 22 23	 and planning guides as it relates to planning as well as the NERC TDL standards. Q Okay. Have you ever testified at the PUC the Public Utility Commission of Texas before? 	21 22 23	MR. HERRERA: Angel Herrera, Jr. Q (BY MR. MEDRANO) To what extent were 2011

3 (Pages 9 to 12)

	Page 13		Page 15
1	the previous year of data, which included obviously	1	A Yes.
2	2011, and that was, in part, to gauge from a maintenance	2	Q Okay. The report does not I'm going to call
3	perspective the ability of transmission and generation	3	it the report or review. Is that correct?
4	utilities in the area to take their to take the	4	A Sure.
5	maintenance outage on their equipment. So we looked	5	Q Okay. The report does not include a similar
6	at in other words, we looked at, you know, if the	6	introduction with regards to Harlingen or McAllen or
7	peak was you know, occurred in February or January,	7	other cities in the Lower Rio Grande Valley. Correct?
8	you may not be able to take a maintenance outage during	8	A That's correct.
9	that time period if that peak was too high.	9	Q And why is that?
10	Q Would you agree that 2011 included a particular	10	A The primary drivers for the project were
11	spike in February of that year?	11	because of the load in the Brownsville area.
12	A Yes.	12	Q And I'm looking again at Page 3, specifically
13	Q And that, in fact, lead there were a variety	13	Figure 2, which is labeled Historical BPUB Summer &
14	of factors, but there were actually rolling outages in	14	Winter Peak Demand, 1990-2011. Do you follow me?
15	ERCOT in February 2011. Correct?	15	A Yes.
16	A Yes.	16	Q BPUB stands for Brownsville Public Utility
17	Q And the summer of 2011 was also extremely hot.	17	Board. Correct?
18	Correct?	18	A That's correct.
19	A Yes.	19	Q And we see in Figure 2 historic gradual
20	Q Would you agree that the 2011 weather	20	historic load growth in Brownsville to approximately
21	conditions were extreme, perhaps an outlier, for weather	21	300 megawatts. Is that correct?
22	conditions in ERCOT?	22	A Correct.
23	A For ERCOT, yes.	23	Q Okay. And I'm going to look now at Figure 3
24	Q So on Figure 8 on Page 10 of the review, is	24	also on Page 3, and this is titled Projected BPUB Summer
25	this the level of load that the report assumes going	25	& Winter Peak Demand with the 250 MW Industrial Load
	Demo 14		
	Page 14		Page 16
1	forward in this in this review?	1	-
1 2	_	1 2	Page 16 Addition in 2014. Do you follow? A Yes.
	forward in this in this review? A No. That was primarily when we looked at		Addition in 2014. Do you follow? A Yes.
2	forward in this in this review?	2	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the
2 3	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load	2 3	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3
2 3 4	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that	2 3 4	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the
2 3 4 5	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast,	2 3 4 5	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is
2 3 4 5 6	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data.	2 3 4 5 6	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct.
2 3 4 5 6 7	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast?	2 3 4 5 6 7	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct?
2 3 4 5 6 7 8	 forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. 	2 3 4 5 6 7 8	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the
2 3 4 5 6 7 8 9 10 11	 forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for 	2 3 4 5 6 7 8 9	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020.
2 3 4 5 6 7 8 9 10 11 12	 forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might 	2 3 4 5 6 7 8 9 10	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct?
2 3 4 5 6 7 8 9 10 11 12 13	 forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? 	2 3 4 5 6 7 8 9 10 11	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not?
2 3 4 5 6 7 8 9 10 11 12 13 14	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I	2 3 4 5 6 7 8 9 10 11 12	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading.
2 3 4 5 6 7 8 9 10 11 12 13 14 15	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question.	2 3 4 5 6 7 8 9 10 11 12 13 14 15	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	 forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you 	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to lead this witness.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	 forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made 	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to lead this witness. MR. McGRATH: Why?
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	 forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made that you recall to adjust for outlier years, either high 	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to lead this witness. MR. MEDRANO: He's not mine.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made that you recall to adjust for outlier years, either high or low in that period?	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to lead this witness. MR. MEDRANO: He's not mine. MR. McGRATH: You called him.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made that you recall to adjust for outlier years, either high or low in that period? A Uh-huh. I don't recall that.	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to lead this witness. MR. MEDRANO: He's not mine. MR. McGRATH: You called him. MR. MEDRANO: So you're objecting to form?
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made that you recall to adjust for outlier years, either high or low in that period? A Uh-huh. I don't recall that. Q Okay. The review begins with a general	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to lead this witness. MR. MEDRANO: He's not mine. MR. McGRATH: You called him. MR. MEDRANO: So you're objecting to form? MR. McGRATH: No. I'm objecting to
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made that you recall to adjust for outlier years, either high or low in that period? A Uh-huh. I don't recall that. Q Okay. The review begins with a general discussion of the Brownsville area. I'm looking	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to lead this witness. MR. MEDRANO: He's not mine. MR. MEDRANO: So you're objecting to form? MR. McGRATH: No. I'm objecting to leading.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 9 20 21 22 23	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made that you recall to adjust for outlier years, either high or low in that period? A Uh-huh. I don't recall that. Q Okay. The review begins with a general discussion of the Brownsville area. I'm looking specifically at Page 2, and you talk some about the	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 9 20 21 22 23	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe I'm allowed to lead this witness. MR. MEDRANO: He's not mine. MR. MEDRANO: So you're objecting to form? MR. MEDRANO: So you're objecting to form? MR. MEDRANO: Okay.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 7 8 9 20 21 22 3 24	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made that you recall to adjust for outlier years, either high or low in that period? A Uh-huh. I don't recall that. Q Okay. The review begins with a general discussion of the Brownsville area. I'm looking specifically at Page 2, and you talk some about the characteristics of Brownsville and its load particularly	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 9 20 21 22 23 24	 Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. McGRATH: Objection; leading. MR. McGRATH: Why? MR. MEDRANO: I believe I'm allowed to lead this witness. MR. McGRATH: You called him. MR. McGRATH: No. I'm objecting to form? MR. MEDRANO: Okay. Q (BY MR. MEDRANO) Can you answer the question,
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 9 20 21 22 23	forward in this in this review? A No. That was primarily when we looked at the maintenance piece of it, we were looking at the load level from that perspective. The other load levels that we assumed were based on a were a normal forecast, which includes, you know, many years of historic data. Q Was it a ten-year or 20-year weather forecast? A I don't recall. Q Do you recall if the forecast included 2011? A I don't recall. Q Do you recall if any adjustments were made for it to statistically adjust for any outliers that might have been in the period of study? A Are you asking in terms of I'm not sure I understand your question. Q In terms of projecting load primarily, if you were using ten-year weather, were any adjustments made that you recall to adjust for outlier years, either high or low in that period? A Uh-huh. I don't recall that. Q Okay. The review begins with a general discussion of the Brownsville area. I'm looking specifically at Page 2, and you talk some about the	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 9 20 21 22 23	Addition in 2014. Do you follow? A Yes. Q Okay. And this with this addition, the assumed 250 megawatts of industrial load, this Figure 3 shows load growth to approximately 600 megawatts. Is that correct? A That's correct. Q And that 250 megawatts of projected load is the bulk of the increase over this period from 2011 to 2020. Correct? A Correct. Q And 250 megawatts is a very significant amount of load, is it not? MR. McGRATH: Objection; leading. MR. MEDRANO: I believe Im allowed to lead this witness. MR. MEDRANO: He's not mine. MR. MEDRANO: So you're objecting to form? MR. MEDRANO: So you're objecting to MR. MEDRANO: Okay.

4 (Pages 13 to 16)

Page 17 Page 13 1 A Can you repeat the question? amperage capacity. Oftentimes in the power industry 2 Q Cratainly. How would you - in terms of size, when you pash too much power through a transmission 5 Q Okay. And there was a lack of consensus at the conductor will heat up and it will sag, and there are - 6 Regional Planning Group regarding including this load of conductor will heat up and it will sag, and there are - 7 250 megawatts. Would you agree with that? conductor will heat up and it will sag, and there are - 9 Q And given that lack of consensus, can you s that termed in a percentage? 9 A. If this as waver presenting that information, we firt that you could look at the graph and, you know, the it mass without th 230 megawatts of industrial load secont for any self-supply or 16 addition, but it would be easy to subtract that. Q 17 Q Okay. Did the include the 250 megawatts of industrial load specifically? A Sone so for instance, if a - if a certain 20 Does IRCOT's analysis in this report of the aso to subtract that. Page 18 18 A In this review, yes. Page 18 20 A In this review, yes. Page 18 21 A In this review, yes. Page 10	1			Page 5
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24 Figure 5 the significance, in general terms, the	10 11 12 13 14 15 16 17 18 19 20 21 22	 Q Together these events constitute a contingency that's described in this section of the report. Is that correct? A Correct. Q Okay. And can you confirm that the term "precontingency" means peak load with no outage of transmission or generation capacity? A Yes. Q It's precontingency, just normal normal operations? A That's correct. Q Okay. Can you explain generally, or specifically as you'd like but for our general audience 	10 11 12 13 14 15 16 17 18 19 20 21 22	 unit. In other words, that would be 95 percent of that 138-kV voltage. Undercontingency, then the low voltage on that would be .90 per unit. In other words, that would be 90 percent of that 138-kV voltage. Q Okay. Okay. The next question I'm looking at Page 6 and 7 of the report, specifically Figures 4 and 5. Figure 4 is 2016 Thermal Overloads in Brownsville Area Without 250 MW of Load, and I assume that means the industrial load is projected? A That's correct. Q And Figure 5 is 2016 Thermal Overloads in Brownsville Area including 250 MW of Load. Are you following me? A Yes.
Example a substance of the substance of	10 11 12 13 14 15 16 17 18 19 20 21 22 23	Q Together these events constitute a contingency that's described in this section of the report. Is that correct? A Correct. Q Okay. And can you confirm that the term "precontingency" means peak load with no outage of transmission or generation capacity? A Yes. Q It's precontingency, just normal normal operations? A That's correct. Q Okay. Can you explain generally, or specifically as you'd like but for our general audience if you can, what the significance of a thermal overload	10 11 12 13 14 15 16 17 18 19 20 21 22 23	 unit. In other words, that would be 95 percent of that 138-kV voltage. Undercontingency, then the low voltage on that would be .90 per unit. In other words, that would be 90 percent of that 138-kV voltage. Q Okay. Okay. The next question I'm looking at Page 6 and 7 of the report, specifically Figures 4 and 5. Figure 4 is 2016 Thermal Overloads in Brownsville Area Without 250 MW of Load, and I assume that means the industrial load is projected? A That's correct. Q And Figure 5 is 2016 Thermal Overloads in Brownsville Area including 250 MW of Load. Are you following me? A Yes. Q Okay. Can you explain on for Figure 4 and
	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Q Together these events constitute a contingency that's described in this section of the report. Is that correct? A Correct. Q Okay. And can you confirm that the term "precontingency" means peak load with no outage of transmission or generation capacity? A Yes. Q It's precontingency, just normal normal operations? A That's correct. Q Okay. Can you explain generally, or specifically as you'd like but for our general audience if you can, what the significance of a thermal overload is?	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	 unit. In other words, that would be 95 percent of that 138-kV voltage. Undercontingency, then the low voltage on that would be .90 per unit. In other words, that would be 90 percent of that 138-kV voltage. Q Okay. Okay. The next question I'm looking at Page 6 and 7 of the report, specifically Figures 4 and 5. Figure 4 is 2016 Thermal Overloads in Brownsville Area Without 250 MW of Load, and I assume that means the industrial load is projected? A That's correct. Q And Figure 5 is 2016 Thermal Overloads in Brownsville Area including 250 MW of Load. Are you following me? A Yes. Q Okay. Can you explain on for Figure 4 and Figure 5 the significance, in general terms, the

5 (Pages 17 to 20)

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	Page 21		Page 23
1	A Sure. In Figure 4, the red bubble, so to	1	then that means it's nearing its capacity and would be
2	speak, represents a line that is overloaded before the	2	something from a planning perspective that we'd want to
3	contingent before any contingencies occur, and the	3	keep an eye on.
4	orange bubbles represent lines that are overloaded after	4	Q Does ERCOT typically plan to alleviate loads
5	a contingency.	5	greater than 90 percent using transmission solutions?
6	In Figure 5, the same thing, the red	6	A Not we would nonexplicitly plan a project to
7	bubbles indicate lines that are overloaded before the	7	alleviate a line that was loaded greater than 90 percent
8	contingency occurs, and the green.	8	if it was below its if it was below 100 percent.
9 10	(Telephonic voice: Joining the meeting) (Inaudible)	9 10	Q So there's no NERC NERC or ERCOT planning
11	THE REPORTER: I didn't understand that.	11	protocol or guide that requires 90-plus percent below 100 to be resolved?
12	MR. MEDRANO: We'll come back to it.	12	A Not at this time.
13	A The orange bubbles represents lines that are	13	Q Okay. And I just want to clarify. On these
14	THE REPORTER: I can't hear you.	14	figures, a base-case violation means that that's a
15	MR. MEDRANO: Can everybody on the line	15	current violation and postcontingency means if there's
16	if everyone on the line can mute your phones, please,	16	an outage of a component?
17	that will help the back feed.	17	A Let me clarify that. So a base-case violation
18	Q (BY MR. MEDRANO) Continue, please.	18	would be precontingency, so that means before the
19	A Sure. So, again, on Figure 5, the red bubbles	19	contingency were to occur that that line would already
20	graphically illustrate where there are lines that are	20	be overloaded. Postcontingency is after a contingency
21	overloaded precontingency, and the orange bubbles	21	were to occur, then that line would be overloaded. And
22	represent lines graphically that are overloaded after a	22	both of those are both of those would be occurred
23	contingency.	23	planning criteria violations under NERC and ERCOT
24	Q Okay. Are any voltage violations shown on	24	planning criteria.
25	Figures 4 and 5?	25	Q Okay. And you'd agree that over half of the
	Page 22		Page 24
1	A No.	1	violations shown on Figure 5 occur because of the
2	Q Does that mean there are none, or does that	2	inclusion of the 250 megawatts of potential industrial
3 4	just mean they are not shown on these figures?	3	load. Correct?
* 5	A There were no voltage violations in the case.Q Okay. Thank you.	4 5	A Correct. O And I believe you just answered this, but I
6	MR. McGRATH: Andres, can we take a minute	6	Q And I believe you just answered this, but I just want to clarify. And these these overloads
7	to find out who that was that joined?	7	shown on these figures do constitute violations of ERCOT
8	MR. MEDRANO: Can we do that at the end	8	rules and NERC requirements?
9	and go on?	9	A That's correct.
10	MR. McGRATH: (Nodded)	10	Q All right. I'm at the bottom of Page 7 now.
11	Q (BY MR. MEDRANO) All right. Can you describe	11	An N-1-1 contingency considers a loss of both – in this
12	generally the significance of load flow in excess of	12	example in this report considers the loss of both
13	100 percent on a line's contingency rating?	13	345-kV lines supporting the Rio Hondo substations. Is
14	A Sure. So if a line is in excess of 100 percent	14	that correct?
15	of its rating, then that represents a violation of	15	A That was one of the N-1-1 contingencies that we
16	criteria, it would be a violation of NERC criteria as	16	considered in this report.
17	well as ERCOT planning criteria. You know, more	17	Q That's the one discussed here on Page 7?
18 19	physically what that represents is that that line is	18	A Right. Correct.
20	beyond its designed capacity, and it would represent a safety hazard.	19	Q Okay. But there are others there were
20	Q And can you explain generally what the	20 21	others later? A Yes.
22	significance of a load flow greater than 90 percent of a	22	Q And do you agree with this definition of an
23	line's contingency rating means?	23	N-1-1 contingency, a sequence of events consisting of
24	A From a planning perspective, if load is - if a	24	the initial loss of a single generator or transmission

6 (Pages 21 to 24)

Exhibit JRD-RA-11 Page 7 Page 25 Page 27 system adjustments followed by another loss of a single 1 If you look at the first full paragraph midway down, the 1 2 generator or transmission component, which would be the 2 second sentence. Do you agree that this states that the 3 secondary contingency? 3 Brownsville area has a peak load forecast of about -- of 4 A Yes. 4 approximately 627 megawatts excluding the 250-megawatt 5 MR. MEDRANO: Can I remind everyone if 5 load addition in 2016? 6 you're on the phone, can you please mute your line. 6 A Yes. And I would like to clarify that when we 7 It's pretty loud here. say the Brownsville area in this section of the report, 7 8 Q (BY MR. MEDRANO) So although on Page 7 they 8 we're talking about the greater -- not just the BPUB 9 are talking about losing both the 345-kV lines in the 9 load, but also the greater Brownsville area. Rio Hondo, an N-1-1 could be the loss of one of those 10 10 Q Okay. Because that's my next question. The 11 lines in, say, a power plant near it. Is that correct? 11 tables earlier in the report, specifically Figures 2 12 A I'd like to clarify that a little bit. 12 and 3 on Page 3, show a BPUB load of approximately 13 Q Sure. 13 300 megawatts in 2014? A Under NERC standards, that would be true. 14 A Right. 14 15 Under ERCOT planning criteria per the planning guides, a Q Okay. Without the 250 addition. So that's 15 16 generator -- a generator as the first contingency 16 just for the Brownsville public utilities? 17 followed by a transmission line, that would -- that 17 A Yes. 18 would be treated differently than it would be under the 18 Q The Brownsville area is 627 approximately 19 NERC standards. And in ERCOT, the planning guide treats 19 projected in 2014? 20 that as no loss of load is allowed for that situation. 20 A That's correct. Actually, I think that's for 21 Q Okay. You agree that the NERC standards 21 2016. 22 require the system to operate at a minimum N-1 22 2016? Yeah, you're correct. 0 23 contingency planning. Correct? 23 In ERCOT's analysis of the N-1-1 24 A Correct. 24 contingency, does it accept that the failure of two 25 But you'd agree that NERC does not require the Q 25 transmission lines feeding a substation is a low Page 26 Page 28 1 system to operate at a minimum N-1-1 contingency, just 1 likelihood contingency? 2 NERC? 2 A I don't know that we define "likelihood" in 3 A Just NERC requires that the system must be 3 ERCOT, not that I recall. 4 stable with no cascading outages under an N-1-1 4 (Exhibit Billo No. 2 marked) 5 condition. 5 Q (BY MR. MEDRANO) Mr. Billo, I've handed you a 6 6 Q Okay. And what does ERCOT require for N-1-1? copy of what I've had marked as Exhibit No. 2, and this 7 7 Α The same thing, the system must be stable with is an excerpt from the NERC, North American Electric 8 no cascading outages. 8 Reliability Corporation, Reliability Concepts document, 9 Q But in each -- in each that could include a 9 and I understand that you did not author this. I'm 10 loss of load. Correct? 10 simply providing it as a means of a demonstrative 11 A That is correct. 11 exhibit. 12 0 So just to summarize, you'd agree that neither 12 A Okay. 13 NERC nor ERCOT requires the system to operate with no 13 Q On Page 23, which is the second page of the 14 loss of load in the event of an N-1-1 contingency? 14 exhibit, there's a chart entitled Likelihood where it 15 A Correct. 15 shows various contingencies with a scale of decreasing 16 0 I'm turning to Page 10 of the report. This is 16 likelihood. Do you follow me? 17 continuing the discussion of the N-1-1 contingency. And 17 A Yes. 18 on Figure 8, which is the historical maximum daily peak 18 Q Okay. And you'd agree that the failure of two 19 for 2010-'11 for the Brownsville area and also in the 19 transmission lines feeding a substation is near the 20 text describing the figure, the peak -- area peak load 20 bottom of this likelihood scale. Correct? 21 for Brownsville is stated approximately 627 megawatts 21 A Correct. 22 without, excluding, the hypothetical 250 megawatts of 22 0 Do you agree with this -- with this diagram? 23 industrial load. Is that correct? 23 A Yes. 24 MR. GUY: Objection; form. 24 Q But to clarify, you said that that likely --25 0 (BY MR. MEDRANO) I'm sorry. I'm on Page 8. the low likelihood was not factored into ERCOT's 25

7 (Pages 25 to 28)

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, <u> </u>			Page 8
	Page 29		Page 31
1	consideration of the N-1-1?	1	option, Option 3 in Scenario 1, resolves the
2	A I'd agree with that.	2	postcontingency overloads in the study model for
3	Q All right. Did ERCOT analyze the need for this	3	Brownsville by connecting those two substations?
4	project on an N-1-1 basis because it believes that this	4	MR. McGRATH: Objection; leading.
5	type of contingency is more likely to happen in the	5	Q (BY MR. MEDRANO) Mr. Billo, have we ever
6	Brownsville area or because of the impact to the	6	spoken before today?
7	Brownsville metropolitan area would be so severe even if	7	A Not that I remember.
8	that likelihood did occur?	8	
9	A Can you repeat that?	9	Q Do I represent you in any manner? Am I your legal counsel?
10	Q Sure. It's sort of two parts.	10	A No.
11	A Uh-huh.	11	
12	Q Did ERCOT ERCOT based its analysis on this	12	MR. PETERS: (Nodded)
13	project on an N-1-1 basis. You'd agree with that.	13	MR. MEDRANO: I would ask counsel to hold
14	Correct?	14	the leading objections since it's not my witness.
15	A Yes.	15	A I'm sorry. Could you repeat that question?
16	Q Okay.		Q (BY MR. MEDRANO) Certainly. Would you agree
17	A In part.	16	that Option 3 in Scenario 1, which is a North Edinburg
18	-	17	to Loma Alta 345-kV line, resolves postcontingency
19		18	overloads in the study model for Brownsville?
20	that contingency is more likely than not to more	19	MR. McGRATH: Objection; leading.
21	likely to occur in Brownsville than elsewhere in ERCOT?	20	A I agree.
21	A No.	21	Q (BY MR. MEDRANO) And that is that is
22	Q Did it do so because it thought that that	22	connecting the two substations, North Edinburg and
	contingency would be more severe if it happened in	23	Loma Alta. Correct?
24 25	Brownsville than elsewhere in ERCOT?	24	A Yes.
25	A Yes.	25	Q And the same is true for Option 4 correct
	Page 30		Page 32
1	Q So you would not necessarily analyze a	1	which also connects North Edinburg to La Palma?
2	transmission project for need in another area of ERCOT	2	A The same is true in that it it corrects the
3	on an N-1-1 basis?	3	overloads in the Brownsville area. I agree.
4	A We would.	4	Q Okay. Although the Option 3 description and
5	Q But the severity of the contingency's	5	cost includes the factor that it be routed in proximity
6	occurrence would factor into your analysis. Is that	6	to South McAllen substation, that is not required to
7	what you're saying?	7	resolve the postcontingency overloads in the study model
8	A This I would say that the impact to the area	8	as shown on Figures 4 and 5. Is that correct?
9	would be a factor; that would be a factor in our	9	A That's correct.
10	analysis.	10	Q Did ERCOT estimate the cost for this project in
11	Q Okay. I'm looking on Page 12. In the third	11	Option 3 or 4 in Scenario 1 without routing in proximity
12	the third paragraph it states that the there was a	12	to South McAllen?
13	recommendation that the line be routed near the existing	13	A The cost estimates were provided by AEP and
14	South McAllen 138-kV station in order to support the	14	Sharyland Utilities. I do not believe that I do not
15	long-term needs of the west side of the Lower Rio Grande	15	recall receiving a cost estimate not including the
16	Valley. Do you follow me?	16	routing near South McAllen.
17	A Yes.	17	Q And Option 3, as estimated in this report, is
18	Q And there's two scenarios discussed here.	18	cheaper scratch that.
19	Scenario 1 assumes that there is no addition of the	19	Option 4 in the scenario still requires
20	250 megawatts of industrial load. Scenario 2 assumes	20	load shed in the case of an N-1-1 contingency. Correct?
21	that there is the addition. Correct?	21	A That's correct.
22	A Correct.	22	Q And, again, that load shed that occurs with
23	Q Okay. So for Option 3 in Scenario 1, which is	23	Option 4 does not depend on the line being routed in
24	the North Edinburg to Loma Alta 345-kV line, and this is	24	proximity to the South McAllen substation. Correct? It
25	described starting on Page 14, you would agree that this	25	has to do with connecting North Edinburg to La Palma
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8 (Pages 29 to 32)

	Page 33		Page 35
1 1	with the new La Palma to Palo Alto 138 line. Correct?	1	Q And that is that's despite the fact that
2	MR. McGRATH: Objection; leading.	2	there was no consensus at RPG to include that load in
3	A That's correct.	3	this report?
4	Q (BY MR. MEDRANO) Okay. I'll move on to	4	A That's correct.
5 5	Scenario 2 now, and this scenario assumes the addition	5	Q Was any sensitivity analysis conducted for the
	of the 250 megawatts of industrial load to Brownsville	6	long-term considerations without that 250 megawatts of
	by 2016. Am I correct?	7	industrial load?
8	A Correct.	8	A Not not that I remember.
9	Q And for this option, am I reading the report	9	Q Okay. On Page 19 about halfway down, there's a
10 c	correctly that the preferred Option 4 for Scenario 1 was	10	sentence, "The Rio Hondo-Loma Alta 345-kV line was added
	leemed insufficient when that load was incorporated into	11	as a proxy to support the load addition in the
	he analysis?	12	Brownsville area in order to evaluate the Cross Valley
13	A That's correct.	13	reliability needs in 2020." Do you see that?
14	Q And option excuse me. In Option 5, the	14	A Yes.
15 p	proposal is to in addition to the 138 La Palma to	15	Q Can you explain what that means?
	Palo Alto line is to construct a North Edinburg to	16	A Sure. When we were evaluating the long-term
	oma Alta 345 line. Is that correct?	17	needs of the Valley, obviously with that 250-megawatt
18	A Correct.	18	load addition, then that would put a stress on the
19	Q And going to Loma Alta instead of La Palma adds	19	Brownsville area. We were primarily concerned with
20 le	ength, approximately 16 miles, to the project. Would	20	looking at the west side of the Valley as well as Cross
21 y	you agree with that?	21	Valley flows. And so we put a line in to sort of serve
22	A I would agree with that.	22	as a way to serve that 250-megawatt load in the
23	Q And you agree as a general matter that adding	23	Brownsville area without affecting the results in the
24 le	ength to transmission projects increases their costs as	24	rest of the area.
	vell. Correct?	25	Q So was the Rio Hondo to Loma Alta 345-kV line,
	Page 34		Page 36
1	A Correct.	1	was that incorporated into any of the cost assumptions
2	Q And Option 5 is the preferred option for	2	in this report?
3 S	cenario 2 as recommended in this report. Is that	3	A No.
	orrect?	4	Q So that's independent that would be
5	A Correct.	5	independent of the any of the projects described in
6	Q And Option 5 still would necessitate load shed	6	this report?
7 in	the option in the occurrence of an N-1-1	7	A That's correct.
	ontingency. Correct?	8	Q Okay. What load projections were used for any
9	A Correct.	9	area of the Lower Rio Grande Valley other than
10	Q So to summarize, you'd agree that Option 5,	10	Brownsville?
	thich is longer and more expensive than Option 4 for	11	A For the for the long term
	cenario 1, still requires load shed if the	12	Q Yes.
	50 megawatts of industrial load materializes?	13	A in 2020? We used an in-house developed load
14	MR. GUY: Objection; form.	14	forecast for 2020.
15	Q (BY MR. MEDRANO) In the case of an N-1-1	15	Q And why were these projections not included in
	ontingency?	16	this report?
17	MR. McGRATH: Objection; leading.	17	A They they would have been available through
18	A I agree.	18	the long-term system assessment.
19	Q (BY MR. MEDRANO) Okay. I'm moving on to	19	Q Have you and your counsel prepared any
	age 19 of the report, which is titled Long-Term	20	documents to produce today at the deposition
	onsiderations for the Lower Rio Grande Valley. All of	21	electronically?
	e long-term considerations include the addition of the	22	A Yes.
	50 megawatts of industrial load in Brownsville. Is	23	Q Okay. Do you know if what you just mentioned
	at accurate?	24	that the load forecast for 2020 for areas other than
2.5	A That's correct.	25	Brownsville is included in those documents?

9 (Pages 33 to 36)

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	Page 37		Page 39
1	A I don't recall if they are.	1	Q Can you describe what "near overloaded" means?
2	Q Do you know if they are publicly available?	2	And is there a percentage term for that?
3	A They are available on our website, but on the	3	A Yeah; I don't think that there's anything
4	log-in side of the website.	4	particularly defined in that regard. That's more an
5	Q Okay. All right. Moving on to Page 20 of the	5	engineer judgment. In this case, we used 92 percent
6	report, and would you agree with the summary that the	6	lines that were 92 percent overloaded we felt would
7	North Edinburg to South McAllen transmission line is	7	the potential would be overloaded in the near future.
8	presented as an alternative solution to the upgrades of	8	Q And is that the 92 percent overloaded now or
9	138-kV lines?	9	projected in 2020?
10	A That's correct.	10	A It's projected in 2020.
11 12	Q And is it accurate to is the report accurate	11	Q So if you looked at the lines now in the near
13	that the cost to upgrade overloaded lines is estimated at \$35.4 million?	12	term, they would not be near 90 percent?
14	A Lines that would be projected to be overloaded	13	A Did not look at that; I did not look at that.
15	in 2020, yes.	14 15	Q Okay. So the 90 percent for the long term is
16	Q And is it accurate to state that the cost to	15	purely looking at projected load in 2020? A That's correct.
17	upgrade the lines that would have the 90 percent plus	17	Q Okay. And is the answer the same for the short
18	that we discussed earlier is estimated at \$95 million?	18	term that there's there's no ERCOT requirement or
19	MR. GUY: Objection; form.	19	NERC requirement that you resolve lines that are loaded
20	MR. MEDRANO: Can you can you explain	20	at 90 percent plus
21	your objection so I can clarify?	21	A That's correct.
22	MR. GUY: You mentioned the 90 percent we	22	Q until they get to 100?
23	discussed earlier.	23	A That's correct.
24	MR. MEDRANO: Certainly.	24	Q Would you agree generally that the upgrades to
25	MR. GUY: Earlier when we were talking	25	the 138-kV lines described here on Page 20 would not
	Page 38		Page 40
1	about 90 percent, I think we were talking about the	1	require the acquisition of new right-of-way?
2	short-term forecast and the short-term conditions.	2	MR. GUY: Objection; form.
3	We're now on the long-term conditions. I don't know if	3	MR. MEDRANO: Do you want to clarify?
4	the answer is different.	4	MR. GUY: I just think it's misleading.
5	MR. MEDRANO: Happy happy to ask for	5	Requiring right-of-way is outside the scope of an ERCOT
6	that clarification.	6	independent review of a transmission project.
7	Q (BY MR. MEDRANO) Mr. Billo, earlier I asked	7	Q (BY MR. MEDRANO) Would you agree that the term
8	you to describe the significance of load flow greater	8	"upgrade" means that you would be modifying, replacing
	than 90 percent of a line's contingency rating. Do you	9	or enhancing existing infrastructure rather than
	recall that?	10	building new infrastructure?
11	A Yes.	11	A Generally, yes.
12	Q And we were talking then about short-term	12	Q Do you generally assume in applying the process
	forecasts. Correct?	13	that new transmission infrastructure assumes a new
14	A That's correct.	14	right-of-way?
15 16	Q Is the same principle of your of your answer	15	A Not always, but typically.
	and description there applicable to the long-term	16	Q Okay. So would it be fair to say that
18	forecast? And if not, how is it different?	17	typically upgrades would not require that new
	A In the long term, we would view it slightly differently in that when we look at the long-term	18 19	right-of-way? A I think that would be fair,
	analysis, we would look to see if there were lines that	20	MR. MEDRANO: I'm going to ask, again, if
	were near overloaded, and that would give us an	20 21	everyone on the line could please mute your phones.
	indication if if we were to propose an upgrade to	22	Little clicks and clacks really reverberate here in the
	solve a need in a particular area if there were lines	23	room. Thank you.
	that were near overloaded, then we would want to make	24	Q (BY MR. MEDRANO) On Page 20 of the report, it
	sure that we account for that.	25	states, "The Frontera station was considered as an

10 (Pages 37 to 40)

			Page 11
	Page 41		Page 43
1	alternative to South McAllen, but terming the line at	1	recall the difference in the reduction between the two
2	South McAllen showed a greater reduction in loading on	2	potential solutions?
3	the overloaded elements." Do you follow me?	3	A I do not recall.
4	A Yes.	4	Q Okay. And do you recall what criteria was
5	Q Okay. Where is the data to support that	5	applied to determine if the difference was significant?
6	conclusion?	6	A Don't remember that.
7	A I don't think that we provided that data in	7	Q Same paragraph, next sentence. It says,
8	this report. It may be in the documents that we	8	"Therefore, connecting a 345-kV source from North
9	provided on the CD.	9	Edinburg into the South McAllen 138-kV substation will
10	Q If it's not, would it be publicly available?	10	defer or eliminate the need to implement a significant
11	A If it's not, it is probably not publicly	11	amount of 138-kV line upgrades." Do you follow me?
12	available at this time.	12	A Yes.
13	Q Do you recall what the difference in reduction	13	Q Can you specify which of those upgrades would
14	was over terminating a line at Frontera as opposed to at	14	be deferred rather than eliminated?
15	South McAllen?	15	A I don't remember that.
16	A I do not recall.	16	Q Would this analysis for any of the topics we
17	Q Do you recall what criteria generally were used	17	discussed here on Page 20, would this analysis change if
18	to determine if the difference was deemed significant?	18	the 345-kV source was not connected to South McAllen
19	A I don't recall.	19	substation but rather to a new substation?
20	Q And just to clarify, there's two lines that are	20	A It could potentially change.
21	mentioned here in the report, La Palma to Rangerville	21	Q Was that scenario analyzed?
22	and Weslaco Unit to Stewart Road lines, and it's - it's	22	A I believe that we we only looked at Frontera
23 24	indicated those lines would need would need their own	23	and South McAllen.
24	solutions regardless of 138 upgrades for the new 345 to South McAllen. Is that correct?	24	Q You didn't look at what if there was a new
-23	South McAllell. Is that confect?	25	substation instead of South McAllen?
	Page 42		Page 44
1	A That's correct.	1	A Not that I remember.
2	Q So no costs for the upgrade or replacement of	2	Q If there was a new substation instead of South
3	those lines is included in this report?	3	McAllen, would it matter what proximity it was to South
4	A That's correct.	4	McAllen, or was that analyzed?
5	Q A similar question just to clarify on Page 20.	5	A We didn't did not analyze that.
6	It states that the the 345-kV to South McAllen	6	Q Okay.
7	solution would provide for better long-term solution	7	A Let me clarify that.
8	because it would significantly reduce the north to south	8	Q Certainly.
9 10	flow on other highly loaded transmission lines on the	9	A The what would matter is the connectivity to
	west side of the Lower Rio Grande Valley. Do you	10	the 138-kV lines in the area.
11 12	follow? It's about midway through that big paragraph.	11	Q The connectivity of the 138-kV lines in the
13	It says, "Further, this alternative will provide." A Yes.	12 13	area to whatever substation the 345 went into?
14	Q Okay. And my question is the same as before.	13 14	A That's correct. O Okay. Would that necessitate proximity to the
15	Where is the data to support that conclusion?	14	Q Okay. Would that necessitate proximity to the South McAllen substation?
16	A I don't believe that we included that in this	16	A Again, we did not analyze that specifically.
17	report.	17	Q Still in that paragraph on Page 20, the last
18	Q Do you believe it's included in the document	18	sentence says, "Any 345-kV lines that are constructed
19	the electronic documents you've brought today?	19	between the west part of the Lower Rio Grande Valley and
20	A I don't remember. It may be included in that,	20	the east part of the Valley should be constructed and
21	but I don't remember for sure.	21	routed in anticipation of a 345/138-kV connection at the
22	Q Okay. And if not, is it the same answer that	22	existing South McAllen substation." Do you follow?
23	it would not be publicly available?	23	A Yes.
24	A That's correct.	24	Q Okay. Can you explain what 138-kV connection
25	Q Okay. And similar questions as before. Do you	25	at the South McAllen substation would be sufficient to
		and water a solidar	

11 (Pages 41 to 44)

			PUCT 41606 SOAH 473-13-5207 Exhibit JRD-RA-11 Page 12
	Page 45		Page 47
1	substitute for the 345-kV connection?	1	Q It says, "Based on this analysis, it can be
2	A I'm not sure I'm following your question.	2	concluded that a 345-kV line from North Edinburg to the
3	Q Certainly. In the sentence it says the line	3	east side of the Lower Rio Grande Valley (with a future
4	should be routed in anticipation of a 345/138-kV	4	connection at South McAllen) will likely defer multiple
5	connection at the South McAllen substation.	5	line upgrades that would be needed between 2016 and
6	A Right.	6	2020." Do you follow me?
7 8	Q Generally in reading the report, it implies that the connection needs to be a 345 connection	7 8	A Yes. O Okay. Do you agree that that statement is
0 9	A Right.	9	Q Okay. Do you agree that that statement is based all these long-term projections are based on
10	Q but this has/138-kV. So I'm asking what the	10	the on the addition of 250 megawatts of industrial
11	connection of the 138 would need to be to substitute for	11	load in Brownsville?
12	the 345?	12	A I'm not sure that I would agree with that.
13	A Yeah, so what what we mean by that is that	13	While the 250-megawatt load was included in this
14	the 345 system of whatever line would go from the west	14	analysis, I'm not sure that I would say that that would
15	side of the Valley to the east side of the Valley, that	15	be that that recommendation is dependent upon that.
16	345 line should be connected to the 138-kV system at	16	Q So the upgrade to those lines may be needed
17	South McAllen.	17	whether or not the 250 megawatts materializes or not?
18	Q So it matters that the 138s to South McAllen	18	A We did not analyze that, but that that could
19 20	are somehow connected to the 345 line, whether or not it's at that substation?	19 20	be the case.
20	A Our analysis was based on the connection being	20	Q But you don't you don't know based on your analysis of this project. Correct?
22	at that substation. I can't answer for a different type	22	A That's correct.
23	of connection.	23	Q And you'd agree that that statement that the
24	Q Okay. You may not - you may know this, you	24	line the line improvements being necessary, that
25	may not. Are you aware that the application in this	25	contemplates, as we were just talking about, the
	Page 46		Page 48
1	case states that a 345 connection cannot be made at	1	connection at South McAllen and not a new substation.
2	South McAllen, but instead a new substation will be	2	Correct?
3	required?	3	A Correct.
4	A I am not aware of that.	4	Q And you also agree that that statement does not
5	Q If you assume with me for a moment that that's	5	require the North Edinburg to Loma Alta line be routed
6	true, would that affect your analysis?	6	in proximity to South McAllen, only that there's a
7	A I'd have to think about that. I'm not sure off	7	connection to that substation for the 138s connected to
8 9	the top of my head. Q Would it be something you'd want to model in	8	that substation of a 345 line at some time to resolve the long-term reliability issues. Is that correct?
10	making a recommendation on this project?	9 10	A I think that in our analysis we looked at a
11	A A different type of connection?	11	we were primarily looking at a North Edinburg to South
12	Q If there was a new substation required instead	12	McAllen 345-kV connection. So I would I would say
13	of connecting to South McAllen, would that be something	13	that based on our analysis, I would say that a North
14	you'd want to model in making a recommendation for this	14	Edinburg to South McAllen 345-kV connection would be
15	project? When I say "modeled," I mean that term very	15	needed to resolve those overloads.
16	generally, evaluate, analyze, however you characterize	16	Q To prevent the to prevent upgrades to the
17	it.	17	138s. Correct?
	A Potentially. I'd really have to think about	18	A That's correct.
18		19	Q That's for the long-term plan. Correct?
19	that. Potentially we might want to look at that.		A That's correct
19 20	Q Okay. Okay. I'm on the last paragraph on	20	A That's correct. O For the short-term plan
19 20 21	Q Okay. Okay. I'm on the last paragraph on Page 20. And I'm sorry to take this line by line, but I	20 21	Q For the short-term plan
19 20	Q Okay. Okay. I'm on the last paragraph on	20	
19 20 21 22	Q Okay. Okay. I'm on the last paragraph on Page 20. And I'm sorry to take this line by line, but I just need clarification on some of these concepts	20 21 22	Q For the short-term plan (Telephonic voice: Leaving the meeting)

12 (Pages 45 to 48)

	Page 49		Page 51
1	those points are corrected. Correct?	1	you. Is that correct?
2	A Strictly taking into account the needs by 2016,	2	A That's correct.
3	that's correct.	3	Q And this and this version does not have the
4	Q And the term "likely" that's used there for the	4	red lines on it. Would you agree?
5	multiple upgrades	5	A I agree.
6	A Uh-huh.	6	Q And would you agree also it doesn't have red
7	Q can you can you give me insight on how	7	lines the red-line changes accepted into it?
8	likely, near certain, somewhat likely?	8	A Just a cursory look, I would agree with that.
9	A No, no. That's no, I cannot.	9	Q Okay. To your recollection, is the Exhibit 4
10	Q Okay. I am going to Page 22 through 24 of the	10	that I handed you, the letter without the red-lined
11	report, figures labeled Figure 9 through Figure 15, and	11	additions, is that the document that was submitted to
12	these are graphical straight-line depictions of the	12	the ERCOT Board?
13	various project proposals in this project. Is that	13	A I don't recall. I mean, it looks it looks
14	correct?	14	like it.
15	A That's correct.	15	Q Subject to check, is that do you recall that
16	Q You'd agree that none of these options include	16	being the version you submitted?
17	a version of the project that is not routed in proximity	17	A Yes.
18	to the South McAllen substation. Is that correct?	18	Q Okay.
19	A The submitted option graphically was not	19	(Exhibit Billo Nos. 5 through 7 marked)
20	specifically routed by South McAllen, but all of the	20	Q (BY MR. MEDRANO) Mr. Billo, I've just handed
21	others, I would agree with that.	21	you three exhibits marked in order, 5, 6 and 7, and
22	Q Which one? I'm sorry.	22	would you agree with me that Exhibit 5 is titled a
23	A Submitted Option, Figure 9 on Page 22.	23	report to ERCOT, the RPG group, Regional Planning Group?
24	Q Okay. The submitted option was not, all the	24	A Yes.
25	other ones are?	25	Q On the Cross Valley project. Correct?
	Page 50		Page 52
1	Page 50 A That's correct.	1	Page 52 A Yes.
1 2		1 2	A Yes.
	A That's correct. Q Okay.		A Yes.Q Okay. And Exhibit 6, would you agree, is a
2	 A That's correct. Q Okay. (Exhibit Billo No. 3 marked) 	2	 A Yes. Q Okay. And Exhibit 6, would you agree, is a similar Cross Valley report made to the TAC, Technical
2 3	 A That's correct. Q Okay. (Exhibit Billo No. 3 marked) Q (BY MR. MEDRANO) Mr. Billo, I'm handing you what I've had marked as Exhibit No. 4. 	2 3	A Yes.Q Okay. And Exhibit 6, would you agree, is a
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2 3 4 5 6 7	 A That's correct. Q Okay. (Exhibit Billo No. 3 marked) Q (BY MR. MEDRANO) Mr. Billo, I'm handing you what I've had marked as Exhibit No. 4. THE REPORTER: 3. Q (BY MR. MEDRANO) 3. I'm sorry. No. 3. And 	2 3 4 5 6 7	 A Yes. Q Okay. And Exhibit 6, would you agree, is a similar Cross Valley report made to the TAC, Technical Advisory Committee? A Yes. Q And would you agree that Exhibit 7 is a report made to the ERCOT Board? A Yes.
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2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 7 8 9 20 21 22 23	 A That's correct. Q Okay. (Exhibit Billo No. 3 marked) Q (BY MR. MEDRANO) Mr. Billo, I'm handing you what I've had marked as Exhibit No. 4. THE REPORTER: 3. Q (BY MR. MEDRANO) 3. I'm sorry. No. 3. And this is a red-lined document entitled Issue for ERCOT Board of Directors. Is that correct? A Yes. Q And it identifies you as the author of this document. Is that correct? A That's correct. Q Okay. It's red-lined, and I apologize but this is the only version of this that I could find on the ERCOT website. To your recollection, was the document submitted with these red lines incorporated in the document? A Not to my recollection, but Q Okay. That's okay. This is really clarification for me for what I found. (Exhibit Billo No. 4 marked) Q (BY MR. MEDRANO) All right. Mr. Billo, I've 	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	 A Yes. Q Okay. And Exhibit 6, would you agree, is a similar Cross Valley report made to the TAC, Technical Advisory Committee? A Yes. Q And would you agree that Exhibit 7 is a report made to the ERCOT Board? A Yes. Q Okay. Are you the author of these documents or co-author? A Yes. Q I'm looking on Page 23 of the report now. I'll reference it in just a second. On Page 23 on Figure No. 12. A Okay. Q And this shows a line, an L-shape, from North Edinburg to South McAllen to Loma Alta. Correct? A Yes. Q Okay. Would you agree that this was the only conceptual diagram provided to TAC and the ERCOT Board with regards to this project in your presentations that
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2 3 4 5 6 7 8 9 10 11 12 13 14 15 6 7 8 9 0 11 23 21 22 23	 A That's correct. Q Okay. (Exhibit Billo No. 3 marked) Q (BY MR. MEDRANO) Mr. Billo, I'm handing you what I've had marked as Exhibit No. 4. THE REPORTER: 3. Q (BY MR. MEDRANO) 3. I'm sorry. No. 3. And this is a red-lined document entitled Issue for ERCOT Board of Directors. Is that correct? A Yes. Q And it identifies you as the author of this document. Is that correct? A That's correct. Q Okay. It's red-lined, and I apologize but this is the only version of this that I could find on the ERCOT website. To your recollection, was the document submitted with these red lines incorporated in the document? A Not to my recollection, but Q Okay. That's okay. This is really clarification for me for what I found. (Exhibit Billo No. 4 marked) Q (BY MR. MEDRANO) All right. Mr. Billo, I've 	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 9 20 21 22 23	 A Yes. Q Okay. And Exhibit 6, would you agree, is a similar Cross Valley report made to the TAC, Technical Advisory Committee? A Yes. Q And would you agree that Exhibit 7 is a report made to the ERCOT Board? A Yes. Q Okay. Are you the author of these documents or co-author? A Yes. Q Im looking on Page 23 of the report now. I'll reference it in just a second. On Page 23 on Figure No. 12. A Okay. Q And this shows a line, an L-shape, from North Edinburg to South McAllen to Loma Alta. Correct? A Yes. Q Okay. Would you agree that this was the only conceptual diagram provided to TAC and the ERCOT Board with regards to this project in your presentations that J just handed to you? MR. GUY: Andres, would you clarify? When

13 (Pages 49 to 52)

SOAH 473-13-5207 Exhibit JRD-RA-11 Page 14 Page 53 Page 55 1 Document No. 1, Figure No. 12, which is labeled 1 A The Regional Planning Group is not a -- it's 2 Option 3. I asked if he agrees that that figure -- a 2 not a voting body. So I don't know that I would representation of that figure is what was presented in 3 3 characterize that as being the same thing. Exhibit Nos. 6 and 7. 4 4 Q (BY MR. MEDRANO) Very well. In the -- in the 5 MR. GUY: (Nodded) 5 documents in the slides that you authored --6 A Actually, I think it was Figures 13 and 14 that 6 A Uh-huh. 7 were presented to TAC, and Figure 14, that was presented 7 Q -- the slides that were labeled as presented to 8 to the ERCOT Board of Directors. 8 the Regional Planning Group did not include a labeled 9 Q (BY MR. MEDRANO) Okay. And each of those --9 option with South McAllen. Correct? 10 each of those figures is a North Edinburg to South 10 A That's correct. 11 McAllen to Palo Alto line -- correct -- with Figure 13 11 Q But the only labeled options presented to TAC 12 having a stop at La Palma? Correct? 12 and the Board did include South McAllen. Correct? 13 A Not Palo Alto. Loma Alta. 13 A That's correct. 14 Q Loma Alta. I'm sorry. Is that correct? 14 And in each of those cases at TAC and at the 0 15 A Right. ERCOT Board, the reason -- South McAllen was included on 15 16 the basis to resolve N-1-1 contingencies in 2020. Is Q Okay. But you'd agree that TAC and the ERCOT 16 17 Board were not presented with options that did not route 17 that accurate? 18 through South McAllen. Is that correct? 18 A No. It was to resolve G-1+N-1 contingencies in 19 A Correct. 19 2020. 20 Q Okay. And if you could look at Exhibit 5 for 20 Q Okay. And can you explain what the difference 21 me, which is the report to the Regional Planning Group, between an N-1-1 contingency is and an N-1 and G-1 21 would you agree that there's no -- no project -- no 22 22 contingency? 23 proposal there that's labeled as an option that includes 23 A Sure. So N-1-1 is a NERC Category C 24 South McAllen? I'm sorry. 24 contingency, and that -- that would include -- that 25 MR. MEDRANO: If everyone could mute their 25 would include a G-1+N-1 where it's -- as we were talking Page 54 Page 56 1 phones, please? 1 earlier, it's an outage of one element followed by 2 A Actually, on Slide 5, there is an option that 2 system adjustments followed by the outage of a second 3 goes to South McAllen. 3 element. The difference in ERCOT is that for a G-1+N-1 Q (BY MR. MEDRANO) That's for the 345 project 4 4 is that there's no load shed allowed to resolve that 5 option for the N-1-1. Correct? 5 versus other N-1-1 load shed is allowed. 6 A That's correct. 6 Q When you say no load shed is allowed, is that 7 Q But the options labeled 1, 3, 4 and 5, none of 7 by NERC standards or by ERCOT standards? 8 those options include a South McAllen. Correct? 8 A It's ERCOT standards per the planning guides. 9 MR. MEDRANO: I'm sorry. I'm going to 9 Q And I want to go back for a minute to the 10 have to ask one more time. I know it's annoying. Can 10 Option 5 in Scenario 2, which was the recommended option everyone please mute your phones. Little noises are 11 in this project. Is that correct? 11 echoing very loud in the meeting room. Thank you. 12 12 A That's correct. 13 MR. McGRATH: I guess we can turn that O It shows that in the event of an N-1-1 there is 13 14 down. load loss. Correct? 14 15 MR. PETERS: We'll work on it at the 15 A That's correct. break. 16 16 0 So how is that not a violation of the ERCOT 17 A That's correct. 17 planning guide? (BY MR. MEDRANO) Okay. So although RPG was 18 0 18 A So, again, for N-1-1 load shed is allowed, but 19 presented with a number of these options that did not 19 for the G-1+N-1 version of an N-1-1, G being a generator include South McAllen, the only options that were 20 20 out, load shed is not allowed for that condition. presented at TAC and at the ERCOT Board included the 21 21 Q But the report does not -- this report does not 22 South McAllen stop in order to resolve N-1 -- N-1-1 state that as the objective of Option 5. Is that 22 23 contingencies in the 2020 time frame. Would you agree 23 correct? 24 with that? 24 A No. I think --25 MR. McGRATH: Objection; leading. 25 Let me help you out. 0

PUCT 41606

14 (Pages 53 to 56)

			PUCT 41606 SOAH 473-13-5207 Exhibit JRD-RA-11 Page 15
	Page 57		Page 59
1	A Okay.	1	A No, I don't know if I I don't know if
2	Q On Page 18, it says all through I just	2	"lasso" is a technical term, but this it does appear
3	missed this. It says all three alternatives solved the	3	that the highlight loops west and then back east.
4	G-1+N-1 postcontingency overloads. Is that correct?	4	Q Okay. And would you agree with the proposition
5	A That's correct.	5	that these routing options couldn't have been considered
6	Q But it continues to say that Option 5, which is	6	when you were making your analysis for this report?
7 8	the recommended option, still has N-1-1 load shed. Correct?	7	When you made your analysis, you were considering a
9	A That's correct.	8	straight line hypothetically from North Edinburg to
10	MR. MEDRANO: Would you like to take a	9	South McAllen?
11	break. I think the court reporter might.	10 11	A Well, we don't at ERCOT, we don't typically get into the routing analysis.
12	Q (BY MR. MEDRANO) Are you okay?	12	Q Correct.
13	A I'm okay.	13	A However, we're not naive to think it was
14	Q Okay.	14	actually going to be a straight line.
15	(Exhibit Billo No. 8 marked)	15	Q Did you consider that there would be an
16	Q (BY MR. MEDRANO) Mr. Billo, I've handed you	16	eastward a westward then eastward progress of this
17	what I've had marked as Exhibit No. 8, which is a series	17	line and then the lasso or loop, however you want to
18	of routing maps. I'm not going to ask you questions on	18	describe it?
19	the final routing, but I do have some questions	19	A Did not consider that.
20	regarding the impact of certain routes on the analysis	20	Q Okay. Can you look at the labeled Routes 23,
21	of your report. Do you agree that these appear to be	21	24, 26 and 30, please?
22	transmission line routing maps?	22	A Okay.
23	A I agree.	23	Q Okay. Would you agree that on each of those
24	Q Okay. And I would stipulate I have outlined	24	routes the highlighted lines, as I've depicted the route
25	certain routes as described in the Company's	25	to the best of my ability as proposed in the
	Page 58		Page 60
1	application. You do not have to accept those are	1	application, has routes proceeding westward then
2	accurate, though I represent I attempted my best to make	2	eastward in very close proximity to one another?
3	them so. These are simply as an as a demonstrative	3	A I'm not sure what very close proximity I'm
4 5	exhibit. And if you flip through, you'll see that	4	not sure what your definition of
5	there's portions, not the complete routes of any route,	5	Q For instance, Links 119 and 120.
7	portions of various routes primarily in the West and South McAllen region. Would you agree with that?	6	A Is there a scale on the map?
8	A Yes.	7 8	Q Yes, on the bottom right-hand corner.
9	Q Do you accept that none of the of the	9	A Okay. I would agree that they appear to be, in some cases, less than a mile.
10	applicant's routes proposed in this case run in a	10	Q Okay. And, of course, you're aware that
11	straight line from North Edinburg to South McAllen?	11	there's certain NERC contingencies labeled A through D.
12	A Yes.	12	Correct?
13	Q In reviewing these maps, you'd agree that many	13	A Correct.
14	of the routes are circuitous to one degree or another	14	Q And you'd agree that a Category D contingency
15	for various reasons. Correct?	15	could be the loss of multiple transmission elements in
16	A Yes.	16	closest proximity?
17	Q Can you please review the Exhibit 8 route	17	A That's correct.
18 19	examples labeled Routes 21 through 30 as highlighted?	18	Q When you were analyzing this project, did ERCOT
20	A Okay. Q Do you agree that the South McAllen substation	19 20	consider the potential creation of any Category D
20	Q Do you agree that the South McAllen substation is designated on each of these route maps? Correct?	20 21	contingencies? A Not that I recall.
22	A Yes.	21	Q If you were aware that the line might create a
23	Q Okay. And you'd also agree that each of these	23	Category D contingency, would that have been a factor in
24	routing options highlighted makes kind of a lasso to get	24	your analysis?
	there, going there and looping back around. Correct?	25	· ····································

15 (Pages 57 to 60)

		-	Page 16
1	Page 61		Page 63
1	MR. MEDRANO: Can you explain?	1	Q (BY MR. MEDRANO) based on those cost
2	MR. McGRATH: Yeah, you seem to be	2	estimates?
3	assuming that this creates a Category D contingency.	3	A (No response)
4	MR. MEDRANO: I will clarify that I am not	4	Q Let me repeat that question. We were
5	assuming.	5	interrupted.
6	Q (BY MR. MEDRANO) I'm asking that if a	6	Is your analysis of whether to recommend
7	Category D contingency were created in routing, would	7	one of the options outlined in the report, does that
8	that have been something ERCOT would consider?	8	depend is that in part based on the cost estimate
9	A I don't know if we would have considered that.	9	attached to that option as included in the report?
10	I'd probably have to confer with typically in a	10	A That's correct.
11	situation like that, I would confer with my engineers	11	Q Okay. And so if there were a greatly divergent
12	and get their opinion before we	12	cost of an option, that could change the analysis of the
13	(Telephonic voice: Joining the meeting)	13	cost/benefit versus another solution. Correct?
14	A before we would analyze that.	14	A Hypothetically, yes.
15	Q (BY MR. MEDRANO) Okay. Still on Exhibit 8,	15	Q Is there any standard cost variance that you
16	can you please review the labeled Routes 11, 12, 13	16	work into your analysis?
17	and 32?	17	A No.
18	MR. PETERS: Can we take a quick break?	18	Q Moving on to the back on Exhibit 1, your
19	MR. MEDRANO: Certainly.	19	report, to the conclusion, which begins on Page 24.
20	(Recess: 2:58 p.m. to 3:06 p.m.)	20	Would you agree at the bottom of the page there that the
21	MR. MEDRANO: Okay. We're going to	21	report states, "The decision concerning which project
22	resume.	22	set to recommend hinges on the assumption of the
23	Q (BY MR. MEDRANO) Mr. Billo, when we broke, I'd	23	250-megawatt load additions to Brownsville."
24	asked you to review Exhibit 8, the routes labeled 23,	24	A Yes.
25	24 I'm sorry, that's not correct 11, 12, 13	25	Q And that and that assumes that this load
	Page 62		
1	and 32.	_	Page 64
2	A Okay.	1	addition comes with no new generation, no cogeneration,
3	Q Okay. And would you agree that these routes	2	no other transmission or distribution upgrades other
4	generally are heading in the opposite direction of the	3	than what's described in this report. Is that correct?
5	Loma Alta substation from the North Edinburg substation?	4	A That's correct.
6	A Yes.	5	Q And on Page 25, it states that ERCOT recommends
7	Q And would you agree that this type of routing	6	that the facilities associated with Option 5 be
8	could potentially add significant length and/or costs to	7	constructed in order to meet the needs of the
9	the project?	8	Brownsville area for 2016 and beyond. Is that correct?
10	A Yes.	9	A That's correct.
11	Q And would that type of effect to length and	10	Q Would you agree that the South McAllen
12	cost, would you agree that that could have an impact on	11	connection is meant to resolve the concerns of the west
13	your analysis of the cost benefits of this project in	12	area of the Lower Rio Grande Valley beyond 2020 and not
14	relation to other possible solutions?	13	the needs of Brownsville in 2016 as projected?
15	A When we obtained the cost estimates in the	14	A Not beyond 2020, but between 2016 and 2020.
16	length estimates from the from AEP and Sharyland for	15 16	Q Would you agree that some of the some of the
17	this this particular project, they indicated that it		estimations for the projects that are discussed in the
18	would be a significant length due to routing	17 18	report do talk about a period beyond 2020?
19	considerations.	18	A That's correct.
20	Q But you include costs in each of your options,	20	Q Would you agree that the analysis for the needs
21	including the Option 5 that you recommended. Correct?	20 21	of the South McAllen connection for the future benefits
22	A That's correct.	21	of the west area of the Lower Rio Grande Valley is based
			on analysis that's not included in this report? You
23	U All fight. Is voir is voir analysis that		
23 24	Q All right. Is your is your analysis that the project is worth on a cost/benefit analysis	23 24	have a conclusion, but not the analysis getting there.
	the project is worth on a cost/benefit analysis (Telephonic voice: Inaudible)	23 24 25	have a conclusion, but not the analysis getting there. Correct? A Correct, not all of the not all of the

16 (Pages 61 to 64)

	Page 65		Page 67
1	results are presented in the report.	1	Q But nonetheless, that type of projection is
2	Q And I guess related to my last question also on	2	what you are basing your recommendation in this project
3	Page 25, it states that the North Edinburg to South	3	for when you're discussing the needs for the project
4	McAllen 345-kV line portion of this project will be	4	in by 2020 or beyond 2020. Correct?
5	needed by 2020 and the South McAllen to east Lower Rio	5	A Yes.
6	Grande Valley 345-kV line portion will most likely be	6	Q The term "in proximity" is used in this report
7	needed sometime in the 2020s for N-1-1 contingency	7	and in your presentations to the various ERCOT bodies.
8	conditions. Is that correct?	8	Do you agree?
9	A Correct.	9	A Yes.
10	Q And when it says "likely," is there any is	10	Q Okay. What is the methodology that ERCOT used
11	there any criteria for determining the likelihood?	11	in determining what constitutes "proximity"?
12	A "Likely" in that context means that our	12	A We did not attempt to define proximity.
13	forecast our forecasted load projections in the	13	Q Did ERCOT's analysis in this regard assume that
14	models that we have show the need let me restate.	14	the future 345-kV line would be tied directly into the
15	Our load forecast and projections show	15	South McAllen substation?
16	that the lines are getting near loaded, near their	16	A That was the assumption in our analysis.
17	capacity limit by 2020. "Likely" means that if the load	17	Q If the line can't be directly tied into South
18	were to continue to grow, then it is likely that that	18	McAllen and a new substation is required, did ERCOT
19	upgrade would be needed.	19	perform any analysis in that regard?
20	Q So that's based on looking at a load forecast	20	A We did not.
21	beyond the five-year plan more into between a ten- or	21	Q Were you to do so, are you able to describe how
22	even 20-year plan. Is that correct?	22	that analysis would be conducted, what type of factors
23	A That's correct.	23	you'd look at?
24	Q Would you agree that forecasting load gets	24	A We would run we would model that and run a
25	increasingly more difficult beyond the period of three	25	contingency analysis.
	Page 66		Page 68
1	to five years?	1	Q And without doing that, you don't know what the
2	A Yes.	2	results of that could be. Correct?
3	Q As an example, would you agree that the ERCOT	3	A That's correct.
4	CDR reports can have fairly different projections of	4	Q And without doing that analysis, you wouldn't
5	future load year to year?	5	be able to say what reliability reasons, if any, there
6	A They can have different projections, yes.	6	would be to locate a new 345-kV substation in direct
7	(Exhibit Billo No. 9 marked)	7	proximity to South McAllen. Is that correct?
8	Q (BY MR. MEDRANO) Mr. Billo, I've handed you	8	A Can you repeat that?
9	what I've had marked as Exhibit 9, and these are a	9	Q Sure. Without doing the study of having a new
10	sampling of three CDR reports that I'm presenting to you	10	substation, you're not able to assume or you're not
11	as a demonstrative exhibit. Would you agree that these	11	able to speculate of how where that substation would
12	are excerpts from 2009, 2012 and 2013?	12	even be located in relation to South McAllen. Correct?
13	A Yes.	13	A We typically don't make judgments on exactly
14	Q As an example, would you agree that the	14	where a substation would be located.
15	projected load, say, in 2012 for 2020 or take 2022.	15	(Exhibit Billo Nos. 10 and 11 marked)
16	The projected load for 2022 in 2012 was 84,000 megawatts	16	Q (BY MR. MEDRANO) All right. Mr. Billo, I've
17	more or less?	17	handed you what I've had marked as Exhibit 10 and
18	A Yes.	18	Exhibit 11. Would you agree that Exhibit 10 is marked
19	Q And in 2013, a year later, it was	19	at the top right-hand corner Exhibit MEC-2 and shows a
20	79,000 megawatts. Correct? A Yes.	20	satellite map with the South McAllen substation
1 21	4 Y 65	21	identified?
21		1 3 2	
22	Q So you agree that it's there's variance in	22	A Yes. O Okay Would you game that Exhibit No. 11 is a
22 23	Q So you agree that it's there's variance in projecting load in that in that time frame in the	23	Q Okay. Would you agree that Exhibit No. 11 is a
22	Q So you agree that it's there's variance in		

17 (Pages 65 to 68)

SOAH 473-13-5207 Exhibit JRD-RA-11 Page 18 Page 69 Page 71 1 A I agree with that. No. 1-14? "Such consideration could also have an 1 2 Q Okay. And you did not prepare either of these 2 adverse impact on service reliability to the future 3 or have any role in preparing either of these documents. 3 South McAllen 345-kV/138-kV substation." Is that correct? 4 A Okay. 4 5 A Correct. And not to be repetitive, but as we've 5 Q 6 Q I'm looking at -- and I'm going to ask you a 6 discussed, your analysis did not consider there being a couple of questions that involve both the answer and the 7 new future substation. Correct? 7 8 map together if you could consider both of them. 8 A Correct. 9 Would you agree that you, and to the best 9 Q So -- and you'd agree that your analysis did of your knowledge anybody at ERCOT, was not consulted 10 10 not include any analysis of service reliability to a about the location of this circle? 11 11 future substation. Correct? A I agree with that. 12 12 A Correct. 13 Q And would you agree this circle is labeled "All 13 Q Have you or anyone at ERCOT, to the best of routes will have to come into and out of this circle"? your knowledge, had any communication with the 14 14 15 A Yes. 15 applicants regarding what constitutes proximity to the 16 Q Do you agree that the South McAllen substation 16 South McAllen substation? is not at the center of this circle as depicted? 17 17 A I have not, and I'm not aware of anybody else A Yes. 18 18 at ERCOT. 19 Q Was routing through this circle -- mandatory 19 Q Would you agree then that as far as your 20 routing through this circle, was that a consideration 20 analysis is concerned, this circle shown on Exhibit 21 that you or anyone at ERCOT, to the best of your 21 No. 10 is somewhat arbitrary? 22 knowledge, made in coming up with your recommendation in 22 MR. GUY: Objection; form. this matter? 23 23 MR. MEDRANO: Can you clarify? 24 A That was not a consideration. 24 MR. GUY: I mean, you're sort of 25 0 I'm going to refer to RFI Response No. 1-14 --25 characterizing what his testimony is. Page 70 Page 72 1 I'm sorry -- Rhodes RFI Response No. 1-14. Are you with 1 MR. MEDRANO: Oh. I'm asking his opinion. 2 me? 2 Q (BY MR. MEDRANO) How would you characterize 3 A Okay. 3 the specific nature of the circle on Exhibit No. 10? 4 Q And in the response it states, "Placing the 4 A Yeah, again ERCOT -- we did not define --5 5 westbound and eastbound circuits on common structures determine close proximity. I felt like our view of that 6 would result in a double-circuit 345-kV line with both 6 situation was we wanted to provide technical analysis 7 7 circuits being used instead of a single-circuit line but leave it to the TSPs and the Public Utility 8 8 that is double-circuit capable, foreclosing the Commission to determine what was appropriate. 9 possibility of using the unused circuit for future 9 Q Would you agree that your recommendation was 10 transmission projects." Do you read that in the 10 made -- for Option 5 in Scenario 2 was made at least in response? part on the basis of the benefit of avoiding upgrades to 11 11 12 A Yes. 12 existing 138-kV lines? 13 13 A Yes. Q Okay. Would you agree that no part of the ERCOT review discussed a scenario for adding a circuit Q And you provide cost estimates for those 14 14 15 to that line other than the first circuit? 15 upgrades. Correct? 16 A For each of the options, it states -- when it's 16 A That's correct. 17 discussed in the 345 line double-circuit capable with 17 Q But you would agree, would you not -- or let me 18 one circuit in place. 18 ask - would you agree that the 138 upgrades could 19 Q Was any analysis conducted of a scenario where include reconductoring or reconstruction? 19 the second circuit was added? 20 20 The avoided 138-kV upgrades? Α A No. 21 21 0 Yes. 22 Q Was any specific project considered where any 22 A That would be a possibility. 23 second circuit was added? 23 Okay. And would you agree that those upgrades 0 24 A No. 24 are a feasible alternative to a 345-kV line connecting Q Can you read the last line of RFI -- Rhodes RFI 25 to South McAllen sometime in the future? 25

18 (Pages 69 to 72)

PUCT 41606

SOAH 473-13-5207 Exhibit JRD-RA-11 Page 19 Page 73 Page 75 1 A We received some information from AEP that it 1 than yourself? 2 may not be feasible to take those 138-kV lines out and 2 A My -- my staff assisted me in that analysis. 3 reliably serve the system due to the length of time it 3 Q And you communicated the recommendation to the would -- it would take to make those upgrades. However, 4 4 Board? 5 that -- we did not include that in the report. 5 A That's correct. 6 Q Did you -- did you analyze their opinion of the 6 (Exhibit Billo No. 13 marked) 7 feasibility? 7 0 (BY MR. MEDRANO) Mr. Billo, I've handed you 8 A Did not. 8 what I've had marked as Exhibit No. 13. This is a 9 Q As presented in the report, would you agree 9 document titled System Operating Limit Methodology for 10 that it is presented as a feasible alternative? 10 Planning Horizon. Is that correct? 11 A Yes. 11 A Yes. 12 Q I'm just trying to eliminate questions. Bear 12 O You are a co-author of this document. Correct? 13 with me. 13 A That's correct. 14 (Exhibit Billo No. 12 marked) 14 Q And you'd agree that this document does not Q (BY MR. MEDRANO) I'm going to change topics 15 15 pertain to this project -- correct -- directly? 16 very slightly, Mr. Billo, to talk about the "critical to 16 A I would say that it -- not directly, but from reliability determination" made in your recommendation. 17 17 the standpoint of how we evaluate system operating 18 A Okay. 18 limits, the study would have been conducted in 19 Q I've handed you what's marked as Exhibit accordance with our system operating limit methodology. 19 20 No. 12, I believe -- 12, which is an excerpt from the 20 Q Okay. You'd agree that for system operating Commission's rule and the ERCOT Planning Guide, 21 limits and interconnection reliability, this document 21 22 Section 3: Regional Planning. Do you agree that's what 22 describes a process and methodology for that 23 I have before you? 23 determination? 24 A Yes. 24 A I'm sorry. Can you repeat that? 25 0 Okay. And on the second page of the exhibit, Sure. Well, actually, let me guide you to 25 0 Page 74 Page 76 there's a highlighted portion which states Section 1 1 Page 5 of this document --(D) -- I'm sorry -- (b) Subsection (D), "Projects deemed 2 2 A Okav. 3 critical to reliability." Do you follow? 3 0 - to the last paragraph. Are you with me? 4 A Yes. 4 Okay. А 5 Q Okay. Do you know of any definition for the 5 Okay. It states, "A list of transmission 0 6 term "critical to reliability" for this process? 6 facilities that are identified to be critical to the 7 A No. 7 derivation of an IROL and the station or substation 8 Q Would you agree there's no definition for 8 location that are associated with the initiating 9 "critical" in the PUC rules, PURA or the ERCOT protocols 9 contingencies that lead to the identification of an 10 and market guides? 10 IROL, will be sent to NERC," and so forth. 11 A Not that I'm aware of. 11 A That's correct. 12 Q Is the designation "critical to reliability" 12 Q Okay. So you agree that in the process of the 13 solely within ERCOT's discretion? 13 system operating limits methodology, which this document 14 (Telephonic voice: Leaving the meeting) 14 describes, there can be the designation of a critical 15 MR. HELD: Mark Held. 15 infrastructure. Correct? A I don't recall the exact language, but I 16 16 A No, that's not correct. What this paragraph is 17 believe that it is. talking about is facilities that are critical to the 17 Q (BY MR. MEDRANO) In this - in this matter was 18 18 derivation of an IROL but not critical to the 19 it your decision to designate this project as critical 19 reliability of the system. 20 to reliability? Q But they're critical for the purpose of this 20 21 A It was the ERCOT Board of Directors. 21 document. Correct? 22 Q You made that recommendation. Correct? 22 A I would -- I would say "yes," but that's -- I 23 A Made the recommendation to the Board. 23 think that term is used differently in this than it 24 Q Are you aware of anybody at ERCOT making an 24 is ---25 analysis of whether it was critical to reliability other 25 Q Certainly. But this document determines --

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1			
1	Page 77		Page 79
1	defines a methodology. Correct?	1	A It does not state that it's a critical need.
2	A That's correct.	2	Q I believe I asked you at the beginning if there
3	Q Is there any similar document for determining a	3	had been any updates to the report since 2011 and you
4	critical need for reliability as the determination was	4	said there had not been. Was that right?
5	made in this case?	5	A Not that I'm aware of.
6	A There's not.	6	Q Okay. Has there been any updates to the
7	Q Okay. Do you know why there's not?	7	analysis or methodology behind the report that was not
8	A It's been that's been a determination that's	8	included in the report?
9	been left to the judgment of ERCOT.	9	A Not of the report.
10	Q Does the in your judgment then I think	10	Q Of the analysis or the methodology that was
11	we're done with that document.	11	used to create this report?
12	In your judgment, does the critical need	12	A Uh-huh.
13	designation in this project apply for the line to serve	13	Q Has there been any updates of that since 2011?
14	the 250 megawatts of industrial load in Brownsville but	14	A As far as our
15	does not exist at this time?	15	Q How you
16	A The designation applies to the North Edinburg	16	A updates and how we do contingency analysis,
17	to Loma Alta line.	17	that sort of thing?
18	Q The designation does not apply to the North	18	Q Yes.
19	Edinburg to South McAllen line. Correct?	19	A Sure.
20	A I don't think we made a distinction between	20	Q How many updates would you say there are?
21	segments of the line.	21	A I don't know that I can define that. We are
22	Q Perhaps I'm asking you to. If you had if	22	constantly trying to improve our processes.
23	you had a North Edinburg to Loma Alta line and North	23	Q But you've not gone back and reanalyzed this
24	Edinburg to South McAllen line, would you agree that	24	project from 2011 with any of those updated analyses?
25	your determination of a critical need applies to the	25	A We have not specifically addressed this this
	Page 78		Page 80
1	North Edinburg to Loma Alta line?	1	project.
2	MR. McGRATH: Objection; form.	2	MR. MEDRANO: If you can just give me a
3	MR. MEDRANO: Explain.	3	minute to review my notes, we might be done.
4	MR. McGRATH: Yeah, there's not a North	4	A Okay.
5	Edinburg to South McAllen line. There's one line	5	(Brief pause)
6	MR. MEDRANO: I believe that counts as	6	
	MR. McGRATH: in the proximity of South		
7	inter a substanting of bodul	1	MR. MEDRANO: I pass the witness. MR. McGRATH: Does anybody else have
7	McAllen.	7	MR. McGRATH: Does anybody else have
8	McAllen. MR. MEDRANO: I believe I couched it as a	8	MR. McGRATH: Does anybody else have questions besides possibly James?
8 9	MR. MEDRANO: I believe I couched it as a		MR. McGRATH: Does anybody else have questions besides possibly James? (No response)
8 9 10	MR. MEDRANO: I believe I couched it as a hypothetical. I'm happy to clarify that as a	8 9	MR. McGRATH: Does anybody else have questions besides possibly James? (No response) MR. McGRATH: Mr. Billo, would you like to
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20 (Pages 77 to 80)

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	Page 81		Page 83
1	What did you have in mind when you when	1	Q Yes. In your view, is it a reasonable
2	you recommended that the project be routed in proximity	2	assumption that those 138-kV lines are now or in your
3	to South McAllen?	3	forecast heavily loaded transmission lines?
4	A As I stated, at ERCOT we typically don't get	4	A In our forecasts they were heavily loaded.
5	into routing analyses, but we wanted the TSPs and the	5	Q And in your experience, is there would you
6	transmission service providers and the Public Utility	6	need to take transmission lines out of service in order
7	Commission of Texas to take into consideration that we	7	to upgrade?
8	saw a technical need to have a 345- to 138-kV connection	8	A Yes.
9 10	at South McAllen. So what we had in mind is that they	9	Q All right. So there may be significant
11	would factor that in their decision on routing.Q Okay. Was it your expectation that this line	10 11	concerns about the ability to upgrade those lines if you can't take them out of service?
12	would actually be directed be routed directly into	12	A Right. Yes, I agree with that.
13	South McAllen or is it proximity as it suggests be	13	Q Why did you designate this project as or why
14	routed nearby?	14	did ERCOT designate this project as a critical
15	A We modeled it as directly connected. It did	15	reliability project?
16	not have any other expectations beyond that.	16	A The main reason was that we saw a need for the
17	Q Okay. The approach that Mr. Medrano described	17	line in a time frame that when we consulted with the
18	to you where the applicants have established a a	18	transmission providers, they indicated
19	circle around South McAllen that they interpret as	19	(Telephonic voice: Leaving the meeting)
20	proximity to South McAllen, does that strike you as a	20	A they would not be able to get that line
21	reasonable interpretation of your recommendation?	21	they would not be able to get that line constructed in a
22	A I think that we really feel like that it's more	22	time frame that we saw the need without the critical
23	for the PUC and the transmission providers to make that	23	designation.
24	determination.	24	Q (BY MR. McGRATH) So why is there a short time
25	Q Okay. So when you when you recommended the	25	frame needed for this line?
	Page 82		Page 84
1	routing in proximity to South McAllen, it was your	1	A Essentially because our model showed the need
2	expectation that the transmission providers would	2	for the line in 2016, and the TSPs indicated to us that
3	interpret that and implement that in some fashion?	3	they would not be able to get that line constructed by
4	MR. MEDRANO: Objection; form. I believe	4	2016 without the without the critical designation.
5	he said PUC or the TSPs.	5	Q Okay. Let me take you back to I guess it
6 7	MR. McGRATH: Oh, I'm sorry.	6	was Exhibit 1, the independent analysis, ERCOT's
8	Q (BY MR. McGRATH) The TSPs? A The PUC and the TSP.	7	independent analysis. And let me ask you to turn to
9	Q Okay. You discussed with Mr. Medrano issues	8 9	Page 7 where Mr. Medrano discussed the N-1-1 analysis with you.
10	surrounding deferring upgrades to 138-kV lines in the	10	Can you describe why N-1-1 is a particular
11	in the South McAllen area, and you mentioned there may	11	concern for the Brownsville area?
12	be issues with taking those lines out of service to	12	A Sure. The concern in the Brownsville area is
13	upgrade them. Can you describe what those issues might	13	that it for an N-1-1 contingency there would be a
14	be?	14	large amount of load shed that would need to occur, and
15	A When we were doing our analysis, AEP provided	15	it's it would be a significant percentage of the load
16	us with some - we had a discussion with AEP that they	16	in the area.
17	felt like they felt that ERCOT's coordination group	17	Q Okay. And do I interpret this correctly that
18	would not allow them to take extended outages on those	18	with the first contingency there would actually need to
19	lines because they may be needed for reliability to	19	be load shed to protect against a second contingency?
20	serve the to serve the load in the South McAllen	20	A That's correct.
21	or in the McAllen area.	21	Q Okay. Is that a – is the Brownsville area
22	Q And in your view, is that a reasonable	22	unique in ERCOT in this regard?
23 24	assumption that those lines are fairly heavily loaded	23	A To my knowledge, yes.
24 25	right now or in your forecast? A I'm sorry. Can you repeat that?	24 25	Q So this is a this is a situation in
2.0		4 D	Brownsville that is an outage exposure that's not seen

21 (Pages 81 to 84)

	Page 85		Dago 97
			Page 87
1	in other parts of ERCOT?	1	about the maintenance windows issues that exist in the
2	A Yes, but let me clarify. There are our	2	Brownsville area. Can you describe the concerns about
3	analysis has shown there are other areas in ERCOT where	3	the ability to take generators and transmission lines
4	you could have to shed some amount of load after the	4	out of service for maintenance in that area?
5	first contingency in preparation for the second, but	5	A Sure. We received comments I believe it was
6	none that's that would be that significant. I think	6	in the formal comments, but I don't recall from
7	it was 175 megawatts, none near that close.	7	transmission providers in the area that they had had a
8	Q Okay. So in the Brownsville area, you would	8	difficulty a difficult time in getting outage
9	potentially have to shed 175 megawatts after the first	9	clearances to do maintenance on their transmission lines
10	contingency. Is that correct?	10	and similarly with the generation in the area. And the
11	A That's correct.	11	reason for that the reason for that is that the load
12	Q Okay. How many customers can you estimate	12	in the area is such that you can't take multiple lines
13	how many customers that would be?	13	or multiple facilities out facilities I mean lines
14	A I cannot.	14	and generation. You can't take multiple facilities out
15	Q On Page 9 of Exhibit 1 there's a Figure 7, Load	15	at the same time because of this the dependency on
16	Duration Curve for the Brownsville Area. Can you	16	the existing lines and generation in the area.
17	describe what that demonstrates?	17	So there's a difficulty in scheduling all
18	A Sure. So when you look at the area and you	18	of the outages that need to occur in a maintenance
19	I think we had a total of 627 megawatts forecast	19	season because there's there's only small windows in
20	forecasted load for that area, and that would be at your	20	the fall and spring in which, you know, there's a
21	summer peak forecast. And what we found is you would	21	potential that the load is going to stay low enough
22	have to shed about 365 megawatts of that load in order	22	during those time periods that you're going to be able
23	to maintain a reliable system under for that N-1-1	23	to take the facilities off for maintenance.
24	contingency.	24	Q Okay. And is Figure 8 on Page 10, does that
25	So if you subtract the 627 minus 365, I	25	is that sort of an illustration of limitations on
	Page 86		Page 88
1	believe you get the 337. And so just looking at that,	1	maintenance windows? Does that sort of show
2	you know, linearly, anytime the load would be above	2	A That's correct.
3	337 megawatts, you'd have to do some amount of load	3	Q Okay. Am I interpreting this correctly that
4	shed. So we did a load duration curve based on an ERCOT	4	anywhere with that well, let me back up.
5	forecast that showed that and just looking at the	5	All of the dots on there are the peak
6	graph of approximately looks like a little over 5,000	6	loads for each day of the year that's shown on here?
7	hours of the year there would be some some chance	7	A That's correct.
8	of needing to shed load for that N-1-1 condition.	8	Q Okay. So anytime a dot is below the dashed
9	Q Okay. Am I interpreting this correctly that	9	line, that might be an opportunity for maintenance?
10	for somewhat over 5,000 hours of the year Brownsville is	10	A That's correct.
11	exposed to a load shed on the first contingency in order	11	Q If it's above the dashed line, then you need
12	to protect against the second contingency?	12	that facility in service?
13	A I'm not I don't know that I would interpret	13	A That's correct.
14	it that way. I think that's load shed for both	14	Q Okay.
15	contingencies.	15	A Yeah. And the other thing the other thing
16	Q Okay.	16	to note on that graph is that when you're scheduling
17	A I don't know that we provided the load shed	17	maintenance, if you're scheduling it, you know, several
18	after the first	18	weeks in advance this is looking back you may not
19	Q All right. 5,000 hours, that's more than half	19	know whether the peak is actually going to be above that
20	of the hours in the year. Right?	20	line or below that line. So when you get to, for
21	A That's correct.	21	instance, like a January time period, it may be that you
22	Q It's more than half the time that Brownsville	22	have mild temperatures and, you know, maybe you could
23	is exposed to that risk?	23	have scheduled maintenance. But, you know, in January
24	A That's correct.	24	you could hit a cold spell as well, in which case you
25	Q Let me ask you I don't think you talked much	25	could be above that line and you may not so if you're

22 (Pages 85 to 88)

SOAH 473-13-5207 Exhibit JRD-RA-11 Page 23 Page 89 Page 91 1 trying to schedule that a couple of weeks ahead of time, 1 reliability project to try to help resolve these 2 concerns in an expedited time frame? 2 you know, there may be hours looking back in hindsight 3 that maybe you could have done it, or maybe days, but in 3 A Yes. reality when you're looking ahead, then you may not have 4 Q Okay. Let me switch back over to South McAllen 4 5 5 for a little bit. I'm on Page 20 now of your report. that. 6 6 Q You may need to be more conservative about what You talked to Mr. Medrano about lines that were loaded 7 vou schedule? 7 over 90 percent or 92 percent and whether NERC criteria 8 8 A That's correct. would require that you address those lines. In your 9 Q Okay. There's -- up above the -- in Figure 8 9 view, is it reasonable for you to look ahead at these 10 up above the date 11 February, there's some outlier 10 lines in the Valley in a fast-growing area, dots. Do you see those? 11 90-percent-plus lines, when you're planning? 11 A Right. 12 A Yes, we feel like that's a reasonable thing to 12 Q Can you describe what those are? 13 do for planning the system. 13 A Sure. That was the -- those are the cold 14 Q Is it accurate that load in the Valley is 14 weather event days in February of 2011. We certainly growing quite rapidly compared to other parts of the 15 15 had very high peak loads during that time period. 16 state? 16 Q Can you describe what happened on the 17 17 A That's my understanding. February 2011 event? What happened in the Valley? 18 O Okay. So is it reasonable to expect that a 18 line loaded at 90-plus percent will continue to be --19 A So, you know, I'm not an operator, but my 19 knowledge is that we had a very cold -- a cold front 20 continue to incur increasing loads in the future in a 20 21 that came into the ERCOT system, and essentially you had 21 fast-growing area? a lot of load due to heaters and whatnot that caused a 22 A Yes. 22 23 spike in demand. 23 Q Just to be clear, is the routing near South Q And that's what you see in these dots that are 24 McAllen, is that -- does that have any relationship to 24 up between 400 and 600? Those are the heating load 25 25 the question of whether to plan for a 250-megawatt load Page 92 Page 90 in Brownsville, or is that a western Valley 1 during that period? 1 2 A That's correct. 2 consideration? 3 Q All right. Is it true that during that -- that 3 A We did not study that without the 250-megawatt 4 was a period when you thought you could schedule outages 4 load addition on the east side of the Valley, but I 5 and in fact there was a generation plan of scheduled 5 would agree that the South McAllen recommendation is 6 6 primarily due to line loadings on the west side of the outages at that point? 7 A That's correct. In the Valley. 7 Valley some distance. 8 Q So it turned out that a period you thought you 8 Q Okay. And I believe Mr. Medrano asked you a 9 9 could schedule outages because of the weather turned question about your assumption of a Rio Hondo to Loma 10 into a problem? 10 Alta line in your long-term analysis. Did I understand A That's correct. correctly that that line was essentially designed to 11 11 12 This situation that's described in the N-1-1 12 address the 250-megawatt industrial load issue in that 0 13 contingencies section of the report, does that situation 13 analysis? 14 exist in Brownsville today, these risks of outages in 14 A That's correct. We were trying to make the 15 the Brownsville area? Maybe I should phrase is this an 15 analysis on the west side sort of agnostic to the east 16 ongoing issue? 16 side. 17 A (Whispering to Mr. Peters) 17 Q I see. Mr. Medrano asked you if you have Q Let me add, I don't want to get into any 18 updated your analysis in Exhibit 1. Is there any 18 process at ERCOT that would have you update an analysis 19 confidential information. So if you're concerned about 19 like this after it's completed and approved by the 20 20 that, let me know. 21 A (Whispering to Mr. Peters) I think that's 21 Board? 22 confidential. 22 A We typically would not do that. Q Okay. I withdraw the question then. 23 23 Q All right. I've got just a couple of exhibits 24 Tell me if you can answer this question. 24 to introduce. 25 Is part of the motivation for declaring this a critical 25 (Exhibit Billo Nos. 14 through 16 marked)

23 (Pages 89 to 92)

PUCT 41606

			SOAH 473-13-5207 Exhibit JRD-RA-11 Page 24
	Page 93		Page 95
1	Q (BY MR. McGRATH) Okay. Mr. Billo, if you'll	1	A TAC does not vote up or down on the project,
2	take a look at what I've had marked as Exhibit 14 and	2	but TAC can I believe TAC can make comments and they
3	tell me if you can identify that as the minutes of the	3	can I'm not sure what the technical term is but I
4	Board of Directors meeting the ERCOT Board of	4	think that they can vote to recommend that the Board of
5	Directors meeting where this project was approved?	5	Directors endorse the project.
6	A It is.	6	Q Okay. And then the ERCOT Board does vote on
7	Q Okay. Could you take a look at Exhibit 15 and	7	the project?
8	ask and tell me if you can identify that as the	8	A That's correct.
9	minutes of the Technical Advisory Committee or TAC	9	Q All right. Can you describe briefly the
10	meeting where this project was approved?	10	membership of TAC and the ERCOT Board with what the
11	A It is.	11	Board where the Board members are from, what groups
12	Q And could you take a look at Exhibit 16 and	12	they represent?
13	tell me if that is the ballot that reflects the TAC vote	13	A I don't know if I can list them all, but
14	on this project?	14	generally the Board is made up of both different market
15	A It is.	15	segments as well as independent members.
16	Q Could you describe just briefly a process that	16	MR. McGRATH: Okay. I think that's all I
17	a project like this goes through at ERCOT as it works	17	have.
18	its way through various levels of review and approval?	18	MR. GUY: I have a few questions.
19 20	A Sure. Initially a project will be submitted by	19 20	EXAMINATION DV MB. CUW
20	a stakeholder to the Regional Planning Group. It will be sent out to an email list to the RPG for a 21-day	20	BY MR, GUY:
22	comment period.	22	Q Mr. Billo, I'm James Guy on behalf of Sharyland Utilities. I have just a few follow-up questions if
23	Q And the RPG is Regional Planning Group?	22	you're ready to proceed.
24	A RPG is Regional Planning Group. My apologies.	24	A (Nodded)
25	The interested stakeholders, through the	25	Q Just to pick up where Mr. McGrath left off
1	Page 94 RPG, can make comments. Those comments will be	-	Page 96
	consolidated and sent out sent back out to the entire	1 2	there on some of the process questions, you sort of described the RPG process generally. Did this project
	RPG. The project proposer has 28 days to review those	3	go through that process?
	comments and provide responses back to those comments.	4	A Yes.
	That period is called a study mode.	5	Q And do you recall how long of a review
6	At the end of the study mode, a project	6	process or how long it took for the RPG, TAC and
7	will undergo ERCOT independent review. And I should	7	ERCOT Board to review this project?
	clarify those are there are four different levels	8	A Well, I don't recall that off the top of my
	of four different tiers of projects that are	9	head. That's probably in the in the documents that
	described in the protocols ERCOT protocols,	10	are provided.
	Section 3.11. Tier I and Tier II projects will have an	11	Q Okay. Do you recall whether any market
	ERCOT independent review where ERCOT will do an	12	participants provided comments on the projects that were
	assessment to determine if the project is needed and is	13	being discussed?
	the best the best project alternative to meet the	14	A I knew there were several market participants
	need. For Tier I projects such as this, which are over	15	that provided comments.
	\$50 million, ERCOT will make a – will take that will	16	Q And then at the end of the independent review
	take the project that project recommendation to the	17	and at the end of the comments from the market
	Technical Advisory Committee, TAC, and TAC can comment	18	participants, the report then recommended Option 5 as
	on that. And then ERCOT will also take that project to the ERCOT Board of Directors for endorsement.	19	being the project that best addressed the reliability
21	Q Okay. At the Regional Planning Group is there	20 21	consideration the contingencies discussed in the
	an actual vote on the project?	21 22	report. Is that correct? A That's correct.
23	A There is not.	22	Q And then and then you I think we've
	Q What about at TAC, Technical Advisory	23	already discussed, but did you then present that
24			

24 (Pages 93 to 96)

		T	raye 20
	Page 97		Page 99
1	A Yes.	1	questions. If you will refer to Exhibit 1, which is the
2	Q And was the Technical Advisory Committee made	2	study. And, again, I'm talking about some of these
3	aware of the lack of consensus on the 250-megawatt load	3	forecast issues I think. In particular, I'm looking at
4	in Brownsville?	4	Page 4 right under Heading 2, Study Approach. The
5	A Yes.	5	first - the first sentence refers to a 2016 summer peak
6	Q And they essentially gave a thumb's up to the	6	base case. What is that referring to?
7	project knowing that?	7	A So that is the model of summer peak conditions
8	A I believe, if I recall, the vote was 28 for,	8	for 2016 that we used for the study.
9	two against.	9	Q And is that for a study that was conducted
10	Q And then you then presented the project or	10	in 2011, is that a typical the typical case you would
11	the option to the ERCOT Board of Directors. Is that	11	have used?
12	correct?	12	A Yes, assuming we're studying the 2016
13	A Yes.	13	condition.
14	Q And do you recall did you make the Board of	14	Q I guess just one other clarifying question. In
15	Directors aware that option that there was not a	15	the discussion you were having with Mr. Medrano about
16	consensus on the whether the 250-megawatt load should	16	the South McAllen substation issue, you were referring
17	be considered?	17	one time in one response you were referring to the
18	A Yes.	18	importance of the connectivity
19	Q And did ERCOT then endorse the project that you	19	A Yes.
20	recommended?	20	Q of connecting the new 345 system with the
21	A Yes.	21	existing 138-kV system. Can you explain what you meant
22	Q Did ERCOT endorse any alternative projects as well?	22	by that?
23		23	A When we ran our analysis, we found that making
24	A Not not to my recollection, no.Q Just a couple of sort of questions coming from	24 25	a 345 to 138-kV connection at South McAllen would
<u> </u>		<u> 45</u>	relieve the overloads that we saw in the 2020 case, 2020
	Page 98	[Page 100
1	different perspectives. I know I know you talked	1	model.
2	about load forecasts with Mr. Medrano a little bit. For	2	Q So you're just referring to the presence of a
3	planning purposes, how often does ERCOT update its	3	connection. Is there a way to improve or improve
4	various load forecasts?	4	that connection or what goes into improving that
5	A The long-term load forecast is I believe	5	connection?
6	it's updated once a year.	6	A I'm not sure I understand your question.
7	Q And is it typical for ERCOT to at the	7	Q Well, I guess what I'm trying to ask, so when
8	beginning of each year after those load forecasts are	8	you were referring to connectivity, you were just
9 10	updated to then go back and re-evaluate every project	9	referring to the presence of a new connection?
11	that's gone through RPG over the last year? A No, that would be that would not be typical.	10	A Correct.
12	Q Do you know if the protocols provide a	11	Q You weren't referring to the quality of that
13	mechanism by which utilities or other market	12	connection, I guess, in contrast?
14	participants can modify an endorsed project?	13 14	A I'm not sure what you mean by "quality."
15	A There is a mechanism in Protocol Section 3.11	14 15	Q I'll withdraw the question. A Okay.
16	that if a project there is a process to modify a	15 16	MR. GUY: I pass the witness.
17	project.	17	MR. MEDRANO: I have a couple follow-ups
18	Q Let me ask you this: What is your role in the	18	if no one else does.
19	RPG process?	19	FURTHER EXAMINATION
20	A In general, ERCOT facilitates the Regional	20	BY MR. MEDRANO:
21	Planning Group.	21	Q You were asked about the critical need of the
22	Q Okay. And you don't purport to speak on behalf	22	project
23	of the ERCOT Board of Directors today. Is that fair?	23	(Telephonic voice: Leaving the meeting)
24	A Yes. Correct.	24	Q (BY MR. MEDRANO) and you stated that part
25	Q Let me ask you just a couple of other	25	of the reason for that designation was the short time
		- 1/3c many	

25 (Pages 97 to 100)

		1	Page 26
	Page 101		Page 103
1	frame the line was needed for 2016. Correct?	1	that were denied by the Public Utility Commission.
2	A Correct.	2	Q When did you say you started working for ERCOT
3	Q That need for 2016 is connection of a 345-kV	3	again?
4	connection between North Edinburg and Loma Alta.	4	A January of 2004.
5	Correct?	5	Q 2004. So you were here through the CREZ
6	A That's correct.	6	process. Correct?
7	Q The South McAllen connection is not needed for	7	A Yes.
8	2016. Correct?'	8	Q Do you recall the Commission denied one of the
9	A Correct.	9	CREZ lines that had been approved through the ERCOT
10	Q You were asked a couple of questions about	10	process?
11	Figure 8 in terms of maintenance windows on Page 10 of	11	MR. McGRATH: Objection; form.
12	the report. Do you recall?	12	MR. MEDRANO: Clarify?
13	A Yes.	13	MR. McGRATH: It wasn't approved through
14	Q Figure 8 demonstrates peak load during	14	the ERCOT process. It was approved through the CREZ.
15	October of 2010 through September of 2011. Correct?	15	A That's right. It was not approved through the
16	A Yes.	16	Regional Planning Group process.
17	Q And I think you agreed with me earlier that	17	Q (BY MR. MEDRANO) Very well. Do you recall
18	2011 was an outlier year as far as weather condition and	18	that there was a rule for economic needed transmission
19	peak load. Correct?	19	lines as approved through the ERCOT process?
20	A Correct.	20	A Yes.
21	Q Would you agree that this profile would look	21	Q Do you recall that the Commission did not
22	considerably different in 2012 or 2013, shaped maybe	22	approve that rule?
23	similarly but lower?	23	A The Commission I don't want to get I
24	A That's hard to speculate due to load growth.	24	don't want to on a technicality here, but the
25	Q But you'd agree that the questions you answered	25	Commission I don't think that they did not approve
	Page 102		Page 104
1	based on this Figure 8 on Page 10 were based on the	-	
2	outlier weather year of 2011. Correct?	1 2	that rule. I think that they came up with a rulemaking
3	A Correct.	3	that effectively lead to ERCOT removing that rule from our criteria.
4	Q You were asked a question about the	4	
5	transmission line that you explained was meant to sort	5	Q But they did not approve the rule in the manner the ERCOT stakeholders approved it. Correct?
6	of sort of kind of make the 2020 projection agnostic	6	A The rule – I think I agree with that.
7	to the new 250-megawatt speculative load in Brownsville.	7	MR. MEDRANO: I pass the witness.
8	Correct?	8	MR. PAYNE: I'll ask one. Robert Payne.
9	A Correct.	9	FURTHER EXAMINATION
10	Q Why didn't you just model it without that	10	BY MR. PAYNE:
11	250-megawatt addition? Wouldn't that have been more	11	Q I'm just curious. In the ERCOT grid, is there
12	accurate?	12	anyplace in Texas that has a buried transmission cable
13	A I don't recall why we didn't model it that way.	13	that is still in use, say, longer than ten miles across
14	That may have been another way to perform the analysis.	14	land? Don't count across bays or anything like that.
15	Q May have been another way, but are you sure the	15	A Longer then ten miles?
16	results would have been the same without conducting the	16	Q Just arbitrary ten miles, you know, longer
17	analysis?	17	lengths.
18	A I cannot be positive without conducting the	18	UNIDENTIFIED SPEAKER: Sorry. The
19	analysis that way.	19	question is not audible on the phone.
20	Q You described the ERCOT stakeholder process at	20	MR. MEDRANO: Can you turn that microphone
21	some length. Would you agree that the Public Utility	21	on? Press the button on the bottom.
22	Commission of Texas has denied projects that have been	22	MR. PAYNE: I hate to try to have to
23	approved through the ERCOT process in the past?	23	answer that. Is this on?
24	A I can't recall off the top of my head I	24	MR. MEDRANO: (Nodded)
25	can't recall any projects that have gone through the RPG	25	MR. McGRATH: (Nodded)
		CONCEPTION OF	

26 (Pages 101 to 104)

			Deers 107
	Page 105		Page 107
1	Q (BY MR. PAYNE) The question was simply is	1	
2	there anyplace on the ERCOT grid where a transmission	2	
3	line, high capacity, 138-kV or larger transmission line	3	I, JEFF BILLO, have read the foregoing
4	in Texas, that is a buried transmission line longer	4	deposition and hereby affix my signature that same is
5	than, say, ten miles across land, not counting across	5	true and correct, except as noted above.
6	bays or gulfs?	б	
7	A I'm aware that there are underground	7	
8	transmission lines in ERCOT. Off the top of my head, I		JEFF BILLO
9	don't know if there are any that are longer than ten	8	Job No. 112354
10	miles.	9	THE STATE OF)
11	Q Are they do you know anything about them,	10 11	COUNTY OF)
12	when they were constructed, if they are still in use and	12	Before me,, on this day personally appeared JEFF BILLO, known to me or
13	they are part of the ERCOT grid is just what I was	12	proved to me on the oath of or through
14	trying to get to?	14	(description of identity card
15	A I think there are some. I know that there are	15	or other document) to be the person whose name is
16	some that are in use recently constructed. There's one	16	subscribed to the foregoing instrument and acknowledged
17	in downtown Houston, a 138-kV line. There's a -	17	to me that he/she executed the same for the purpose and
18	mid-2000s there was a 345-kV line in Dallas that was	18	consideration therein expressed.
19	constructed underground.	19	Given under my hand and seal of office on this
20	MR. PAYNE: Thank you.	20	day of 2013.
21	MR. MEDRANO: Any other questions?	21	
22	(No response)	22	
23	MR. MEDRANO: I believe we're concluded.	23	NOTARY PUBLIC IN AND FOR
24	(Deposition concluded at 4:22 p.m.)	24	THE STATE OF
25		25	My Commission Expires:
	Page 106		Page 108
-	Page 106	4	Page 108
1	CHANGES AND SIGNATURE	1 2	SOAH DOCKET NO. 473-13-5207
2	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13	1 2 3	_
2 3	CHANGES AND SIGNATURE	2 3	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF
2 3 4	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION)
2 3 4 5	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND)
2 3 4 5 6	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF)
2 3 4 5 6 7	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY)
2 3 4 5 6 7 8	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5 6	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO)
2 3 4 5 6 7 8 9	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO) LOMA ALTA DOUBLE-CIRCUIT)
2 3 4 5 6 7 8 9	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5 6	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO) LOMA ALTA DOUBLE-CIRCUIT) 345-KV TRANSMISSION LINE) IN HIDALGO AND CAMERON)
2 3 4 5 6 7 8 9 10	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5 6 7 8	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO) LOMA ALTA DOUBLE-CIRCUIT) 345-KV TRANSMISSION LINE)
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2 3 4 5 6 7 8 9 10 11 12 13	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5 6 7 8	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO) LOMA ALTA DOUBLE-CIRCUIT) 345-KV TRANSMISSION LINE) IN HIDALGO AND CAMERON) COUNTIES, TEXAS) ADMINISTRATIVE HEARINGS REPORTER'S CERTIFICATION
2 3 4 5 6 7 8 9 10 11 12 13 14	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5 6 7 8 9 10	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO) LOMA ALTA DOUBLE-CIRCUIT) 345-KV TRANSMISSION LINE) IN HIDALGO AND CAMERON) COUNTIES, TEXAS) ADMINISTRATIVE HEARINGS
2 3 4 5 7 8 9 10 11 12 13 14 15	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5 6 7 8 9 10 11 12 13	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO) LOMA ALTA DOUBLE-CIRCUIT) 345-KV TRANSMISSION LINE) IN HIDALGO AND CAMERON) COUNTIES, TEXAS) ADMINISTRATIVE HEARINGS REPORTER'S CERTIFICATION ORAL DEPOSITION OF JEFF BILLO August 29, 2013
2 3 4 5 7 8 9 10 11 12 13 14 15 16	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5 6 7 8 9 10 11 12 13 14	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO) LOMA ALTA DOUBLE-CIRCUIT) 345-KV TRANSMISSION LINE) IN HIDALGO AND CAMERON) COUNTIES, TEXAS) ADMINISTRATIVE HEARINGS REPORTER'S CERTIFICATION ORAL DEPOSITION OF JEFF BILLO August 29, 2013 I, Kim Pence, Certified Shorthand Reporter in
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	CHANGES AND SIGNATURE WITNESS NAME: JEFF BILLO DATE: 08/29/13 PAGE LINE CHANGE REASON	2 3 4 5 6 7 8 9 10 11 12 13	SOAH DOCKET NO. 473-13-5207 PUC DOCKET NO. 41606 JOINT APPLICATION OF) STATE OFFICE OF ELECTRIC TRANSMISSION) TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR) CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO) LOMA ALTA DOUBLE-CIRCUIT) 345-KV TRANSMISSION LINE) IN HIDALGO AND CAMERON) COUNTIES, TEXAS) ADMINISTRATIVE HEARINGS REPORTER'S CERTIFICATION ORAL DEPOSITION OF JEFF BILLO August 29, 2013
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27 (Pages 105 to 108)
		Page 28
	Page 109	
1	_	
2	the following includes all parties of record and the amount of time used by each party at the time of the	
3	deposition: Mr. Andres Medrano (1h58m)	
	Attorney for Landowners, et al.	
5	Mr. Kerry McGrath (29m) Mr. Jerry Huerta (no time)	
6	Mr. Mark Held (no time)	
7	Attorneys for ETT, LLC Mr. James Guy (7m)	
	Mr. John Scharbach (no time)	
8	Ms. Alicia Rigler (no time) Attorneys for Sharyland Utilities	
9	Mr. Robert Payne (2m)	
10	Attorney for Robert Payne Ms. Eileen McPhee (no time)	
11	Attorney for City of McAllen Mr. Patrick Reznik (no time)	
	Attorney for Rhodes Alliance, et al.	
12	Mr. John Zerwas (no time) Mr. Jacob Lawler (no time)	
13	Attorneys for The Public Interest	
14	Mr. Richard Crozer (no time) Attorney for the Public Utility Board	
	of Brownsville	
15	Mr. Patrick Peters (no time) Attorney for ERCOT	
16	Mr. Christopher Boswell (no time) Attorney for Thomas and	
17	Martha McClemore, et al.	
18	Mr. Rene Ruiz (no time) Attorney for Mil Encinos, Ltd., et al.	
	Ms. Earnesta Taylor (no time)	
19	Attorney for A. Duda Entities, et al. Mr. Angel Herrera, Jr. (no time)	
20	Attorney for Angel Herrera, Sr.	
21	Mr. Michael Boldt (no time) Attorney for Valley Race Park, LLC	
22	Ms. Elizabeth Sandoval Cantu (no time) Attorney for Delia Lubin, et al.	
	Mr. Jim Aycock (no time)	
23	Attomey for Fidelity Exploration & Production Company	
24		
25	I further certify that I am neither counsel	
	Page 110	
1	for, related to, nor employed by any of the parties in	
2	the action in which this proceeding was taken, and	
3	further that I am not financially or otherwise	
4	interested in the outcome of this action.	
5	Certified to by me on this 30th day of August	
6	2013.	
7		
8	KIM PENCE, CSR	
Ĭ	Certified Shorthand Reporter	
9		
10	CSR No. 4595 - Expires 12/31/13 Firm Registration No. 276	
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1	SOAH DOCKET NO. 473-13-5207				
2	PUC DOCKET NO. 41606				
3	JOINT APPLICATION OF) STATE OFFICE OF				
4	ELECTRIC TRANSMISSION)				
5	TEXAS, LLC AND SHARYLAND) UTILITIES TO AMEND THEIR)				
6	CERTIFICATES OF) CONVENIENCE AND NECESSITY) FOR THE NORTH EDINBURG TO)				
7	LOMA ALTA DOUBLE-CIRCUIT)				
8	345-KV TRANSMISSION LINE) IN HIDALGO AND CAMERON) COUNTIES, TEXAS) ADMINISTRATIVE HEARINGS				
9	COUNTIES, TEXAS) ADMINISTRATIVE HEARINGS				
10	REPORTER'S CERTIFICATION				
11	ORAL DEPOSITION OF JEFF BILLO				
12	August 29, 2013				
13					
14	I, Kim Pence, Certified Shorthand Reporter in				
15	and for the State of Texas, hereby certify to the				
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18	and that the transcript of the deposition is a true				
19	record of the testimony given by the witness;				
20	That the deposition transcript was duly				
21	submitted on August 30, 2013 to the attorney for the				
22	witness for examination, signature, and return to me by				
23	September 11, 2013;				
24	That pursuant to information given to the				
25	deposition officer at the time said testimony was taken,				
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the following includes all parties of record and the 1 amount of time used by each party at the time of the 2 deposition: 3 4 Mr. Andres Medrano (1h58m) Attorney for Landowners, et al. Mr. Kerry McGrath (29m) 5 Mr. Jerry Huerta (no time) Mr. Mark Held (no time) 6 Attorneys for ETT, LLC Mr. James Guy (7m) 7 Mr. John Scharbach (no time) Ms. Alicia Rigler (no time) 8 Attorneys for Sharyland Utilities Mr. Robert Payne (2m) 9 Attorney for Robert Payne Ms. Eileen McPhee (no time) 10 Attorney for City of McAllen Mr. Patrick Reznik (no time) 11 Attorney for Rhodes Alliance, et al. Mr. John Zerwas (no time) 12 Mr. Jacob Lawler (no time) Attorneys for The Public Interest 13 Mr. Richard Crozier (no time) Attorney for the Public Utility Board 14 of Brownsville Mr. Patrick Peters (no time) 15 Attorney for ERCOT Mr. Christopher Boswell (no time) 16 Attorney for Thomas and Martha McClemore, et al. 17 Mr. Rene Ruiz (no time) Attorney for Mil Encinos, Ltd., et al. 18 Ms. Earnesta Taylor (no time) Attorney for A. Duda Entities, et al. 19 Mr. Angel Herrera, Jr. (no time) Attorney for Angel Herrera, Sr. 20 Mr. Michael Boldt (no time) Attorney for Valley Race Park, LLC 21 Ms. Elizabeth Sandoval Cantu (no time) Attorney for Delia Lubin, et al. 22 Mr. Jim Aycock (no time) Attorney for Fidelity Exploration & 23 Production Company 24 I further certify that I am neither counsel 25 • • • KENNEDY REPORTING SERVICE, INC.

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2	the action in which this proceeding was taken, and			
3	further that I am not financially or otherwise			
4	interested in the outcome of this action.			
5	Certified to by me on this 30th day of August			
6	2013. L' P			
7	- Mm Pence			
8	KIM PENCE, CSR Certified Shorthand Reporter			
9	CSR No. 4595 - Expires 12/31/13			
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2						
3	I, JEFF BILLO, have read the foregoing					
4	deposition and hereby affix my signature that same is					
5	true and correct, except as noted above.					
6						
7	ALERT BILLO					
8	Job No. 112354					
9	THE STATE OF THEAT)					
10	COUNTY OF Trans)					
11	Before me, <u>htt Phillo</u> , on					
12	this day personally appeared JEFF BILLO, known to me or					
13	proved to me on the oath of personally known or through					
14	(description of identity card					
15	or other document) to be the person whose name is					
16	subscribed to the foregoing instrument and acknowledged					
17	to me that he/she executed the same for the purpose and					
18	consideration therein expressed.					
19	Given under my hand and seal of office on this					
20	<u>que</u> day of <u>Suptember</u> 2013.					
21						
22	TISA WILKINS My Commission Expires					
23	NOTARY PUBLIC IN AND FOR					
24	THE STATE OF TWONS					
25	My Commission Expires: 4-24.17					
	KENNEDY REPORTING SERVICE, INC.					

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ERCOT Independent Review - Sharyland and BPUB Cross Valley Project

Public



ERCOT Independent Review of the Sharyland and BPUB Cross Valley Project

Version 1.0

EXHIBIT

AUG 2 9 2013 Billo 1 KP

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System Planning

Document Revisions

Date	Version	Description	Author(s)
12/19/2011	1.0	Final	Audrey Zhou, Prabhu
			Gnanam, Jeff Billo

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1. Introduction

The Brownsville area is located at the southernmost portion of the Lower Rio Grande Valley (LRGV) area in the ERCOT system along the international border with Mexico. There are three (3) electric utilities that have service areas in Brownsville and surrounding areas. The bulk of the electrical service inside the city is supplied by Brownsville Public Utilities Board (BPUB), the city-owned, non-profit utility. The other distribution service providers are American Electric Power – Texas Central Company and Magic Valley Electric Cooperative.

Currently, the load is primarily served by four 138 kV lines and the Silas Ray natural gas and oil-fired plant owned and operated by BPUB. The total generation capability of the Silas Ray power plant is approximately 120 megawatts. One of the units is sixty (60) years old. Figure 1 shows the east LRGV area of the ERCOT system including the Brownsville area.



Figure 1: Map of east Lower Rio Grande Valley area

Brownsville is the 16th largest city in Texas. Due to its proximity to the Gulf of Mexico and being at the southern edge of the ERCOT system, the area has experienced multiple storm related forced outages and rolling blackouts in the past. Additionally, the transmission utilities in the area have experienced difficulty in taking lines out for maintenance due to the reliance on only one power plant and a limited number of transmission circuits to support the area.

Figure 2 depicts the historical summer and winter peak demand levels for the BPUB area over the past two decades. The Brownsville area has experienced high population and economic growth and consequently high electric load growth rates. In addition to the normal load growth, BPUB has also projected new industrial load of 250 MW in the 2014 timeframe near the Port of Brownsville. While this 250 MW does not reflect a specific end-use consumer, it reflects BPUB's estimate of the load that could be added at this location if sufficient transmission capacity was available to serve it, based on previous economic development activity and prior industrial load interconnection requests received by BPUB. Figure 3 shows the projected BPUB summer and winter load growth with the expected industrial load assumed to start in 2014.



Figure 2: Historical BPUB Summer & Winter Peak Demand, 1990-2011



Figure 3: Projected BPUB Summer & Winter Peak Demand with the 250 MW industrial load addition in 2014

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In order to provide transmission infrastructure that meets ERCOT reliability criteria and supports BPUB's projected load including industrial load additions of 250 MW, Sharyland Utilities (Sharyland) and BPUB proposed the following improvements:

- Construct a new 345 kV bus at the existing Loma Alta station with one (1) 345/138 kV autotransformer
- Construct a new 345kV transmission line from the existing 345 kV La Palma station to a new 345 kV Loma Alta bus (~14 miles)
- Construct a new 345 kV transmission line from the new 345 kV Loma Alta bus to a new 345 kV bus at the existing Frontera station across the LRGV (~ 59 miles)

ERCOT analyzed the system needs and reviewed the proposed project along with several other alternative projects.

2. Study Approach

The Steady State Working Group (SSWG) 2016 summer peak base case (updated in April 2011) was modified to reflect updated information related to the study area, and the resulting study case was evaluated to determine if there were any reliability criteria exceedances in the east LRGV and Brownsville area.

There are two existing wind plants (Penascal and Gulf Wind) and two planned wind plant additions (Magic Valley Wind Project and Los Vientos) in the study area. Based on 2010 coastal wind output data, it was decided to set the dispatch of the wind plants in the area to 10% of their capacity for the study. This value was near the 10th percentile output for high load hours which, although conservative, seemed appropriate given the lack of history for Texas coastal wind plant data and the low number of plants with operational history. The Railroad DC tie was assumed to be set at zero export and import for the extent of this study.

The SSWG 2016 summer peak base case was modified with the following changes to create the 2016 study case:

- Add a new 163 mile, single circuit 345 kV line from Laredo Lobo to Rio Bravo to North Edinburg with 50% series compensation
- Reconductor the existing Lon Hill-Nelson Sharpe-Ajo-Rio Hondo 345 kV line and Lon Hill-North Edinburg 345 kV line to 1988/2426 MVA normal/emergency rating
- Upgrade the South McAllen to Las Milpas to Stewart Road 138 kV line to 395/476 MVA normal/emergency rating (identified as Reliability Project in 2011 Five-Year Transmission Plan)
- The dispatch of the Penascal, Gulf Wind, Magic Valley Wind Project and Los Vientos wind plants were set at 10% of their capacity
- Silas Ray Unit 5 (10 MW) was turned off in the model for the extent of the analysis because it was decided to not count on the availability of this unit to solve the local reliability constraints for the timeframe of this study due to its age (~60 years) and technology (small gas steam, non-reheat).

• All other generation in the LRGV was set at maximum output with the exception of the hydro powered units which were left at their base case output

During the course of the RPG review of this project, RPG members did not come to a consensus about whether it was appropriate to plan the system based on the inclusion of the potential 250 MW industrial load additions in Brownsville (modeled at the Loma Alta substation). However, based on BPUB's account of historical load interconnection requests at the Port of Brownsville that have been unfulfilled due to limited transmission capacity, ERCOT agreed to perform a sensitivity study to evaluate the system needs with and without the 250 MW load additions.

The evaluation consisted of AC contingency analysis in accordance with NERC and ERCOT criteria. Several transmission improvement options were studied in order to resolve the reliability criteria exceedances found in the 2016 study case. An additional sensitivity analysis was performed using a 2020 summer peak case to allow the longer-term needs of the area to be taken into account in the current decision.

3. Study Case Evaluation

ERCOT performed a power flow AC contingency analysis on the 2016 summer peak study case to find reliability issues that did not meet the NERC or ERCOT planning criteria. The results of the power flow analysis indicated that the worst single contingency is the loss of a 138 kV line combined with the loss of the largest generator¹ in the Brownsville area. For this contingency, there are several thermal overloads under pre-contingency and post-contingency conditions even in the case without the 250 MW load additions. Figure 4 shows the thermal overloads observed in the Brownsville area without the 250 MW load additions. The resulting overloads cannot be relieved by redispatch of the generation in the LRGV area. There were no voltage violations under base case or contingency. The results of this analysis are listed below:

2016 Summer Peak Reliability Results without the new 250 MW load:

Pre-contingency overloads:

Rio Hondo – East Rio Hondo 138 kV line (108.9% of normal rating)

Post-contingency overloads (except overflow in base case):

- La Palma Cavazos line 138 kV (114.8% of contingency rating)
- La Palma Los Fresnos 138 kV line (109.3% of contingency rating)
- Military Highway Cavazos 138 kV line (107.6% of contingency rating)

¹ The loss of generator is modeled as the loss of combined cycle train in the Silas Ray plant.



Figure 4: 2016 Thermal overloads in Brownsville area without 250 MW load

This analysis was repeated on a case that included the 250 MW load additions. Figure 5 shows the thermal overloads observed in the Brownsville area with the 250 MW load additions. There were no voltage violations under base case or contingency. The results of this analysis are listed below:

2016 Summer Peak Reliability analysis including the new 250 MW load

Pre-contingency overloads:

- Rio Hondo East Rio Hondo 138 kV line (152.7% of normal rating)
- East Rio Hondo Central Avenue Sub 138 kV line (141.4% of normal rating)
- La Palma Los Fresnos 138 kV line (124.3% of normal rating)
- La Palma Cavazos line 138 kV (115.0% of normal rating)
- Loma Alta Los Fresnos 138 kV line (108.8% of normal rating)
- Military Highway Cavazos 138 kV line (108.0% of normal rating)