

**BEFORE THE  
LOUISIANA PUBLIC SERVICE COMMISSION**

**IN RE: APPLICATION OF ENTERGY )  
LOUISIANA, LLC FOR RECOVERY )  
IN RATES OF COSTS RELATED TO )  
HURRICANES LAURA, DELTA, )  
ZETA, AND WINTER STORM URI )  
AND FOR RELATED RELIEF )**

**DOCKET NO. U- \_\_\_\_\_**

**DIRECT TESTIMONY**

**OF**

**SEAN MEREDITH**

**ON BEHALF OF**

**ENTERGY LOUISIANA, LLC**

**APRIL 2021**

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**EXHIBIT LIST**

Exhibit SM-1 Summary of Generation Storm Costs for Hurricanes Laura, Delta, and Zeta  
Exhibit SM-2 Summary of Generation Storm Costs for Winter Storm Uri



1 Q4. PLEASE DESCRIBE YOUR CURRENT JOB RESPONSIBILITIES.

2 A. As the Vice President, Power Plant Operations, I am responsible for the safe, compliant,  
3 and reliable operation of our generation fleet including the strategic planning for all assets  
4 across our Louisiana service territory.

5

6 Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

7 A. My testimony summarizes the effect of Hurricanes Laura, Delta, and Zeta and Winter  
8 Storm Uri on the power generation assets of ELL and the Company's efforts to restore the  
9 generating capability of our power generation facilities following these storms. I quantify  
10 the specific costs incurred through February 28, 2021, as well as estimated future costs  
11 necessary to address the storms' impact on the Company's power generation resources,  
12 and I provide support for the conclusion that these costs are reasonable and necessary.

13

14 **II. EFFECT OF HURRICANES LAURA, DELTA, AND ZETA AND**  
15 **WINTER STORM URI ON ELL'S FOSSIL FUELED GENERATION ASSETS**

16 Q6. PLEASE SUMMARIZE THE DAMAGE THE ELL FOSSIL FUELED UNITS  
17 INCURRED AS A RESULT OF HURRICANE LAURA.

18 A. Hurricane Laura made landfall near Cameron, Louisiana on August 27, 2020. Hurricane  
19 Laura affected three generating plant sites owned and operated by ELL. These plants are  
20 located near Lake Charles and includes the Calcasieu Generation Facility ("Calcasieu"),  
21 Lake Charles Power Station ("LCPS"), and Nelson Station ("Nelson").

22 LCPS suffered moderate wind damage to its cooling tower, disc filters, gas turbine  
23 inlet filter house, boiler feed pump and housing, and warehouse. Nelson suffered moderate

1 wind damage to its boiler lagging and insulation, cooling tower fans and structures,  
2 electrical switchgear, battery banks, and to a number of building facilities. Calcasieu  
3 experienced relatively minor wind damage.

4 **Photograph 1 – Nelson 1&2 Cooling Tower**



5

1

**Photograph 2 – Nelson 6 Cooling Tower**



2

1

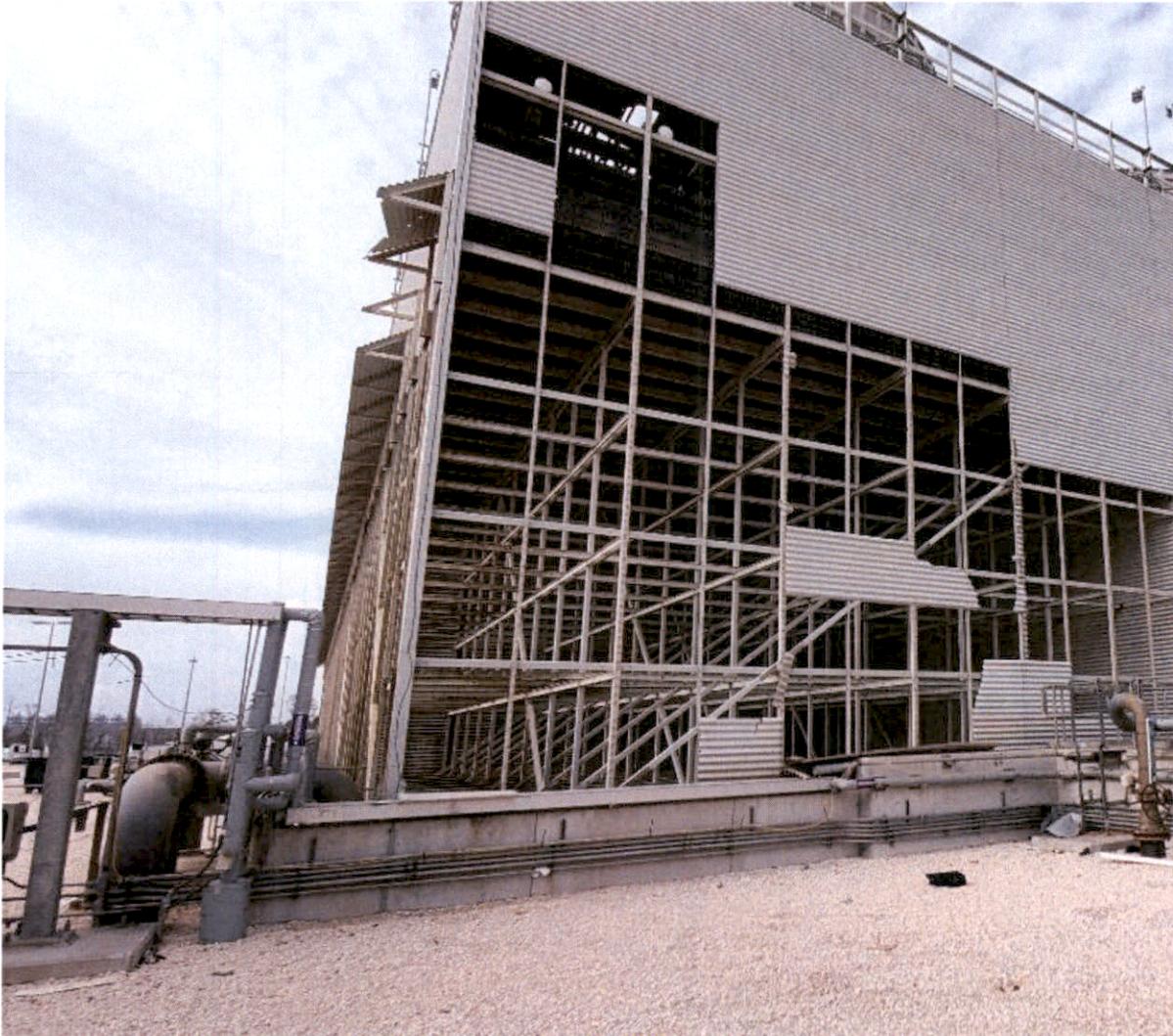
**Photograph 3 - LCPS Boiler feed pump and housing**



2

1

**Photograph 4 – LCPS Cooling Tower**



2

3

4 Q7. PLEASE SUMMARIZE THE DAMAGE THE ELL FOSSIL FUELED UNITS  
5 INCURRED AS A RESULT OF HURRICANE DELTA.

6 A. Hurricane Delta made landfall near Creole, Louisiana on October 9, 2020. Hurricane Delta  
7 affected six power generating plant sites owned and/or operated by ELL. These plants are  
8 located across southern Louisiana from near Lafayette to Lake Charles and includes Acadia

1 Power Block 2 ("Acadia"), Calcasieu, LCPS, and Nelson. Nelson and Acadia suffered  
2 minor wind damage.

3  
4 Q8. PLEASE SUMMARIZE THE EFFECT HURRICANE ZETA HAD ON ELL'S FOSSIL  
5 FUELED UNITS.

6 A. Hurricane Zeta made landfall near Cocodrie, Louisiana on October 28, 2020. Hurricane  
7 Zeta affected multiple fossil-fueled generating plants owned and operated by ELL.  
8 Fortunately, none of the affected plants were directly damaged as a result of Hurricane  
9 Zeta, but there were expenses incurred at several units in preparing for and responding to  
10 the storm.

11  
12 Q9. PLEASE SUMMARIZE THE DAMAGE THE ELL FOSSIL UNITS INCURRED AS A  
13 RESULT OF WINTER STORM URI.

14 A. Winter Storm Uri affected twenty-two fossil-fueled generating plants owned and operated  
15 by ELL. These plants are located in all areas of Louisiana from Lake Charles to Monroe  
16 and south to near New Orleans. This also includes two facilities in southern Arkansas that  
17 are owned by ELL. Five of these plants suffered minor damage.

18  
19 Q10. DID THE DAMAGE CAUSED BY HURRICANES LAURA, DELTA, OR ZETA  
20 REQUIRE REPAIRS TO UNITS THAT WERE NOT IN AN OPERATIONAL STATUS  
21 AT THE TIME OF THE STORM?

22 A. Yes. Hurricane Laura caused moderate wind damage to Nelson Units 3 and 4 which were  
23 in retired status at the time of the storm. The unprecedented winds from Hurricane Laura

1           caused significant damage, exposing a significant amount of lagging and other thermal  
2           material on these two units. Despite these units' non-active status, their damage needed to  
3           be addressed due to environmental and safety concerns. Our abatement processes ensured  
4           all the regulated material was maintained on site and all personnel were safe. There is no  
5           evidence that any lagging or thermal material was blown outside the footprint of Nelson  
6           which is comprised of approximately 1612 acres. ELL limited the hurricane-related repairs  
7           to these units to resolve these immediate concerns.

8  
9           **III.    ELL'S STORM PREPARATIONS AND RESTORATION**

10    Q11:   PLEASE DESCRIBE ELL'S PLANNING TO ADDRESS MAJOR STORMS AND ITS  
11           ACTIVITIES PRIOR TO LANDFALL OF HURRICANES LAURA, DELTA, AND  
12           ZETA.

13    A.     Prior to landfall of Hurricanes Laura, Delta, and Zeta, Power Generation activated its  
14           Emergency Response Center in The Woodlands, Texas. This Emergency Response Center  
15           operated as a command center that maintained communications with the ELL power  
16           generation plants, all other EOC plants, and the System Command Center in Jackson,  
17           Mississippi. In addition, the Emergency Response Center supported emergency situations  
18           at the power generating facilities impacted by Hurricanes Laura, Delta and/or Zeta and  
19           assisted the plants' personnel in restoration activities, such as securing and coordinating  
20           requested material, supplies, and contractors. The Emergency Response Center was  
21           manned by Power Generation Operations personnel, ESL management personnel, and  
22           other ESL staff personnel during each hurricane. Power Generation also maintained an  
23           ESL management employee in the System Command Center to assist with communication

1 between the Emergency Response Center in The Woodlands and the System Command  
2 Center in Jackson.

3 Prior to landfall of Hurricane Laura, LCPS and Nelson were shut down proactively  
4 to place the units in a safe condition and evacuate personnel to a safe location.<sup>2</sup>

5  
6 Q12. WHAT OTHER PLANNING PREPARATIONS DID ELL MAKE TO ADDRESS THE  
7 MAJOR STORM ACTIVITIES PRIOR TO THE LANDFALLS OF HURRICANES  
8 LAURA, DELTA, AND ZETA?

9 A. Prior to the storms, ELL's plants activated their Emergency Hurricane Procedures, which  
10 describe what must be accomplished in anticipation of a hurricane. These procedures  
11 provide a timeline and triggers for coordinating preparation in advance of a tropical storm  
12 or hurricane. Roles and responsibilities, as well as preparation checklists, are detailed to  
13 ensure that the plants and personnel are ready for storm conditions.

14  
15 Q13. WERE THESE SAME PREPARATIONS FOLLOWED FOR WINTER STORM URI?

16 A. Only in the sense that specific procedures and precautions were implemented in advance  
17 of Winter Storm Uri. The potential threats to generating plants are different when faced  
18 with a hurricane versus a winter storm. Therefore, the necessary precautions and  
19 preventative measures required are different.

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<sup>2</sup> Calcasieu was already offline in reserve shut-down in advance of the storm and available for dispatch.

1 Q14. PLEASE DESCRIBE ELL'S PLANNING TO ADDRESS THE WINTER SEASON AND  
2 ITS ACTIVITIES PRIOR TO WINTER STORM URI.

3 A. In advance of each winter season our sites implement their site-specific winter weather  
4 preparation procedures and checklists between September and December each year. Each  
5 site submits a readiness attestation to their respective jurisdictional vice president by the  
6 middle of December. Prior to an actual winter storm, the sites have additional checklists  
7 they perform to ensure they have adequate supplies and all the freeze protection equipment  
8 is functioning correctly prior to the event. Our staff is also augmented at the sites to ensure  
9 we have sufficient support to address any challenges that may arise during the event.

10 Additionally, in anticipation that the system would experience record load and  
11 generation units across the region would become stressed, Power Generation was able to  
12 quickly return Waterford Unit 1 ("Waterford 1") from inactive status to fully operational  
13 status in a mere 48 hours.<sup>3</sup> Additionally, Calcasieu was in a planned maintenance outage  
14 and in the face of Winter Storm Uri, Power Generation stopped the work in progress and  
15 returned the unit to service. LCPS was scheduled to begin a maintenance and warranty  
16 outage prior to Winter Storm Uri that was delayed, providing all available capacity to the  
17 bulk electric system. While not under my operational supervision, I also understand that a  
18 scheduled refueling outage at the River Bend Nuclear Station was deferred to make  
19 addition generation available during the Winter Storm Uri. The actions taken by ELL with  
20 its generation, River Bend, Waterford 1, Calcasieu, and LCPS, collectively made available

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<sup>3</sup> Waterford 1 was deactivated effective February 1, 2021 after following the Midcontinent Independent System Operator, Inc. ("MISO") Attachment Y process. As such, it was not required to be made available for MISO dispatch.

1 over 2,500 MW of generating capacity that was not scheduled to be available during Winter  
2 Storm Uri. These actions reduced the load shed demands from MISO, helped avoid more  
3 significant events on the entire system, and likely mitigated further increases in locational  
4 marginal prices.

5  
6 Q15. WHAT WERE THE SPECIFIC TASKS REQUIRED TO RESTORE OR REPAIR THE  
7 DAMAGED GENERATION RESOURCES?

8 A. As detailed above, the majority of units' damage by one of the storms only required  
9 relatively minor repairs or clean-up in order to return the units to service. The units which  
10 experienced more significant damage could have a portion of their post-storm repairs  
11 completed after the units were back in service. One of the more difficult tasks required to  
12 restore the damaged generation resources after Hurricane Laura was the acquisition of  
13 temporary generators of adequate size to supply power to and test all of ELL's equipment  
14 at the generation facilities. ELL utilized a number of personnel from its generation fleet  
15 and contract personnel to supplement existing staff in order to return units to service as  
16 soon as possible after the storms and to assist in post-storm repairs. One additional  
17 complication ELL was forced to deal with in making these repairs was to ensure that all  
18 COVID-19 safety protocols were strictly followed. Company witnesses Phillip R. May,  
19 John W. Hawkins, Jr., and Michelle P. Bourg provide more detail regarding the challenges  
20 faced by the Company during its restoration efforts in their Direct Testimonies.

1 Q16. WERE THERE ANY SPECIFIC CHALLENGES THAT THE COMPANY NEEDED TO  
2 MEET IN ORDER TO RESTORE OR REPAIR THE DAMAGED GENERATION  
3 RESOURCES?

4 A. Yes. Due to the extensive damage to the transmission system surrounding Calcasieu and  
5 LCPS following Hurricane Laura, the plants were not able to draw from external power to  
6 resume operations. Thus, in order to get Calcasieu and LCPS back on line, ELL would  
7 either have to wait until the transmission lines were repaired and external power could be  
8 fed to the power stations or a black start, which is the process of restoring a power station  
9 without the use of external power, could be attempted—a feat neither plant was designed  
10 to accommodate. Power Generation quickly set about retrofitting Calcasieu to black start  
11 and it was successfully black started. Ultimately, a transmission source was energized to  
12 the area allowing Calcasieu and LCPS to be returned to service and begin serving  
13 customers in the area as soon as it was safe to deliver power. The units were available to  
14 start-up after a transmission tie-in was established due to the extensive use of temporary  
15 generators to restore the units in advance of external power being available. The lessons  
16 learned from the modification made at Calcasieu provide significant future benefit for  
17 customers in the event that the black start capability is required.

1 **IV. RESTORATION COSTS**

2 Q17. WHAT WERE THE TOTAL FOSSIL FUELED GENERATION RESTORATION AND  
3 RECONSTRUCTION COSTS RELATED TO HURRICANES LAURA, DELTA, AND  
4 ZETA?

5 A. As a result of Hurricanes Laura, Delta, and Zeta, ELL seeks approval of the following  
6 generation-related restoration and reconstruction costs:

Storm	Costs Incurred Through February 28, 2021	Estimated Costs to be Incurred After February 28, 2021	Total Generation Restoration and Reconstruction Costs
Hurricane Laura	\$18,045,604	\$214,267	\$18,259,871
Hurricane Delta	\$440,850	\$0	\$440,850
Hurricane Zeta	\$196,653	\$0	\$196,653
Total	\$18,683,108	\$214,267	\$18,897,375

7  
8 These dollar amounts are reflected in Exhibit SM-1 and in the cost summary presented by  
9 Company witness Sarah M. Marcus as Exhibit SMH-1 to her Direct Testimony.

10  
11 Q18. WHAT WERE THE TOTAL FOSSIL FUELED GENERATION RESTORATION AND  
12 RECONSTRUCTION COSTS RELATED TO WINTER STORM URI?

13 A. As a result of Winter Storm Uri, ELL seeks approval of the following generation-related  
14 restoration and reconstruction costs:

Storm	Costs Incurred Through February 28, 2021	Estimated Costs to be Incurred After February 28, 2021	Total Generation Restoration and Reconstruction Costs
Winter Storm Uri	\$403,714	\$746,286	\$1,150,000

1           These dollar amounts are reflected in Exhibit SM-2 and in the cost summary presented by  
2           Ms. Harcus as Exhibit SMH-2 to her Direct Testimony.

3  
4   Q19.   WHY HAS ELL INCLUDED ESTIMATED COSTS IN ITS TOTAL REQUESTED  
5           AMOUNTS?

6   A.     ELL has included estimated costs in its total requested amounts because there are specific  
7           projects that have not been completed as of February 28, 2021 that are necessary to repair  
8           or replace facilities damaged by Hurricane Laura. ELL has also included estimated costs  
9           in its total requested amounts because there are specific projects that have not been  
10          completed as of February 28, 2021 that are necessary to repair or replace facilities damaged  
11          by Winter Storm Uri.

12  
13   Q20.   WHAT ARE THE CATEGORIES OF COSTS INCLUDED IN THE TOTAL  
14          REQUESTED AMOUNT?

15   A.     As shown in Exhibits SM-1 and SM-2, the restoration costs outlined above have been  
16          assigned to one of five major categories, which are: (1) Materials, (2) Contract Work, (3)  
17          Labor, (4) Employee Expenses, and (5) Other. A general description of what costs are  
18          assigned to each of these categories is available in Ms. Harcus's Direct Testimony.

1 Q21. CAN YOU DESCRIBE HOW THE COMPANY HAS ACCOUNTED FOR THESE  
2 COSTS AND ENSURED THAT NO NON-STORM COSTS HAVE BEEN INCLUDED?

3 A. Ms. Marcus's Direct Testimony discusses how the Company has accounted for these costs  
4 and ensured that no non-storm costs have been included in the amounts discussed above.  
5

6 Q22. WERE THE GENERATION-RELATED EXPENSES INCURRED BY THE COMPANY  
7 TO ADDRESS DAMAGES CAUSED BY HURRICANES LAURA, DELTA, AND  
8 ZETA AND WINTER STORM URI REASONABLE AND NECESSARY?

9 A. Yes. The generation costs presented by ELL in this filing were all reasonable and necessary  
10 to ensure that generation was and will be available when needed by the Company's  
11 customers and to address the impact caused by Hurricanes Laura, Delta, and Zeta and  
12 Winter Storm Uri to ELL's generation facilities. When electrical power systems  
13 experience a major system outage, as was the case when the Company's service area was  
14 struck by these storms, generation, transmission, and distribution must be restored to  
15 service in conjunction with one another, which takes time and careful coordination. Power  
16 Generation works to have the units ready to resume operations once transmission and  
17 distribution are ready for the units to begin generating. Under the circumstances, ELL was  
18 able to quickly return the fossil-fueled generation units damaged by these storms to service  
19 for its customers. The costs ELL incurred in restoring the fossil-generation plants were  
20 reasonable and necessary.  
21

22 Q23. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

23 A. Yes, at this time.

**AFFIDAVIT**

STATE OF TEXAS

COUNTY OF MONTGOMERY

**NOW BEFORE ME**, the undersigned authority, personally came and appeared, **Sean Meredith**, who after being duly sworn by me, did depose and say:

That the above and foregoing is his sworn testimony in this proceeding and that he knows the contents thereof, that the same are true as stated, except as to matters and things, if any, stated on information and belief, and that as to those matters and things, he verily believes them to be true.



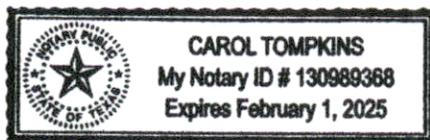
Sean Meredith

**SWORN TO AND SUBSCRIBED BEFORE ME**  
THIS 20<sup>th</sup> DAY OF April, 2021



NOTARY PUBLIC

My commission expires: February 1, 2025





**Louisiana Public Service Commission**  
**Docket No. U-\_\_\_\_\_**  
**Entergy Louisiana, LLC**  
**Storm Costs**

**Generation - Storm Costs by Hurricane**

Description	Hurricane Laura	Hurricane Delta	Hurricane Zeta	Total
<b>Direct</b>				
Contract Work	\$ 10,935,810	\$ 371,882	\$ 193,201	\$ 11,500,893
Employee Expenses	62,159	384	-	62,543
Labor	2,078,967	44,898	-	2,123,865
Materials	3,509,870	39,142	2,416	3,551,429
Other	449,459	(15,456)	1,036	435,040
ESL Billings	774,269	-	-	774,269
Loaned Resources	238,358	-	-	238,358
<b>Audited Costs through 2/28/2021</b>	<b>\$ 18,048,892</b>	<b>\$ 440,850</b>	<b>\$ 196,653</b>	<b>\$ 18,686,396</b>
Mutual Assistance	\$ -	\$ -	\$ -	\$ -
Adjustments	(3,288)	(0)	-	(3,288)
<b>Total Costs through 2/28/2021</b>	<b>\$ 18,045,604</b>	<b>\$ 440,850</b>	<b>\$ 196,653</b>	<b>\$ 18,683,108</b>
Estimated Cost to Complete Repair	214,267	-	-	214,267
<b>Total Gross Cost</b>	<b>\$ 18,259,871</b>	<b>\$ 440,850</b>	<b>\$ 196,653</b>	<b>\$ 18,897,375</b>
Capital	\$ 2,517,166	\$ -	\$ -	\$ 2,517,166
O&M / Other	15,742,705	440,850	196,653	16,380,209
<b>Total Gross Cost</b>	<b>\$ 18,259,871</b>	<b>\$ 440,850</b>	<b>\$ 196,653</b>	<b>\$ 18,897,375</b>

Louisiana Public Service Commission  
Docket No. U-\_\_\_\_\_  
Entergy Louisiana, LLC  
Storm Costs

Generation - Winter Storm Uri Costs

Description	Winter Storm Uri
Direct	
Contract Work	\$ 174,221
Employee Expenses	1,198
Labor	233,668
Materials	(11,571)
Other	279
ESL Billings	5,919
Loaned Resources	-
Costs Recorded Through 2/28/2021	<u>\$ 403,714</u>
Estimated Cost to Complete Repair	\$ 746,286
Total Gross Cost	\$ 1,150,000
Capital	\$ 893,550
O&M / Other	<u>256,450</u>
Total Gross Cost	\$ 1,150,000