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NEPR-MI-2020-0001

NEPR

Received:

Sep 26, 2025

5:23 PM

Supplemental Response: RFI-LUMA-MI-2020-0001-20250919-PREB-1.1

SUBJECT

Transmission System Outages

REQUEST

During the months of July and August 2025:

- a. Were there any transmission system outages that prevented generation from being supplied to serve electric load?
- b. If the answer to part (a) is "yes" identify and explain the cause of each transmission system outage in July and August 2025 that affected the system's ability to transmit power generated and/or purchased to serve the demand. Also, explain how these incidents did or did not affect the fuel and purchased power revenues and/or costs for the months of July and August 2025. Include supporting calculations.
- c. Were any generating units unavailable due to unplanned or forced outages?
- d. If the answer to part (c) is "yes" identify each forced/unplanned outage in July and August 2025 by generating unit, date, time, duration and cause. Also, explain how these incidents did or did not affect the fuel and purchased power revenues and/or costs for the months of July and August 2025. Provide an analysis, with calculations or estimates, of the impact on fuel and purchased power costs related to those outages, including but not limited to estimates of the amounts of fuel costs saved by not running the units that experienced the forced outages, and estimates of the additional costs incurred for the replacement power. If such analysis is not available, explain fully why not. Include supporting calculations").

RESPONSE

This response supplements the response provided on September 24, 2025 with the identification number RFI-LUMA-MI-2020-0001-20250919-PREB-1.1.

- a. Yes, there were transmission system outages during July and August 2025 that prevented generation from being supplied to serve the electric load.
- b. On August 18, 2025, at 1531 hours, a failure between Bank 115/38 kV and the two low-side breakers caused the interruption of the 38 kV system and San Juan Plant. This interruption affected the ESST 9-10, causing the loss of San Juan 9. After the failure was repaired and ESST

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9-10 returned to service, San Juan 9 was started and synchronized back to the system on August 19, 2025, at 0511 hours. The transmission outage that occurred in August 2025 did not have a material impact on fuel and purchased power revenues and/or costs for the months of July and August 2025. For support, please refer to Figure 1.1-1 and Figure 1.1-2.

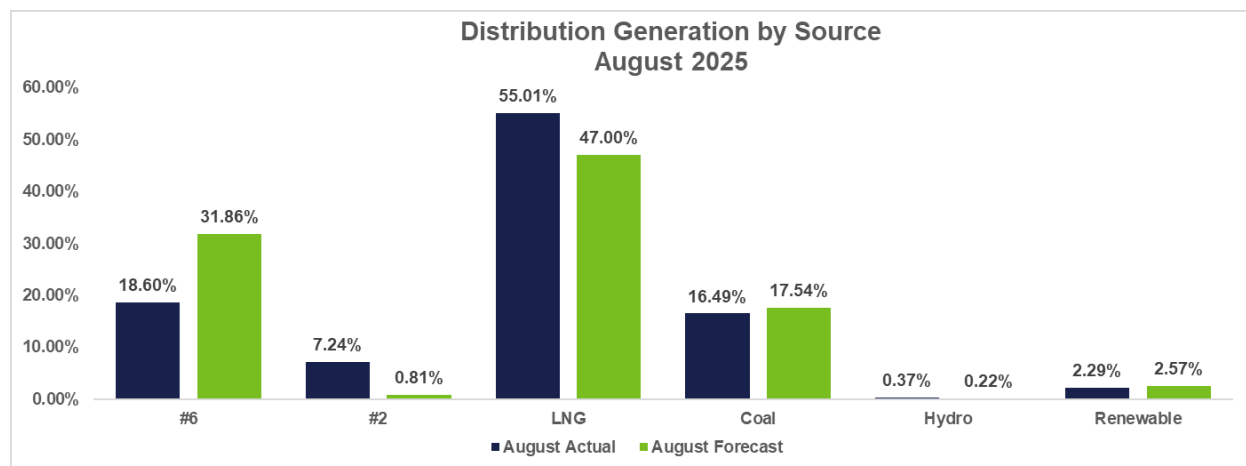
- c. Yes, there were generating units that experienced unplanned or forced outages during July and August 2025.
- d. Each forced or unplanned outage that occurred in July and August 2025 are listed in table 1.1-1.

The forced/unplanned outages that occurred during July and August 2025, as referenced in Table 1.1-1, did not materially affect the fuel and purchased power revenues and/or costs for those months. This is primarily because LUMA's forecasting methodology incorporates an anticipated level of forced/unplanned outages. As a result, the actual fuel and purchased power costs at the end of each month remained closely aligned with the forecasted values. Therefore, the impact of the outages was within the levels anticipated in the quarterly Fuel Charge Adjustment (FCA) – Purchased Power Charge Adjustment (PPCA) planning process.

The variance of forecasted to actual dispatch of the aggregated generation plants was less than 1% for the entire quarter. In addition to the unplanned outages, the variance is affected by actual demand, fuel prices, and the availability of other plants to respond to forced outages by other generators. In terms of generation by source type, actual data shows that natural gas was the primary source during the month, which is beneficial given that it is the lowest cost.

The figure below compares actual and forecasted generation by source type:

Figure 1-1. Distribution Generation by Source August 2025



Actual fuel cost per kWh generated was lower than the forecasted by 23% or \$36 per kWh. Figure below depicts the data by fuel type:

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Figure 1-2. Fuel Cost per kWh Generated August Actual and Forecast

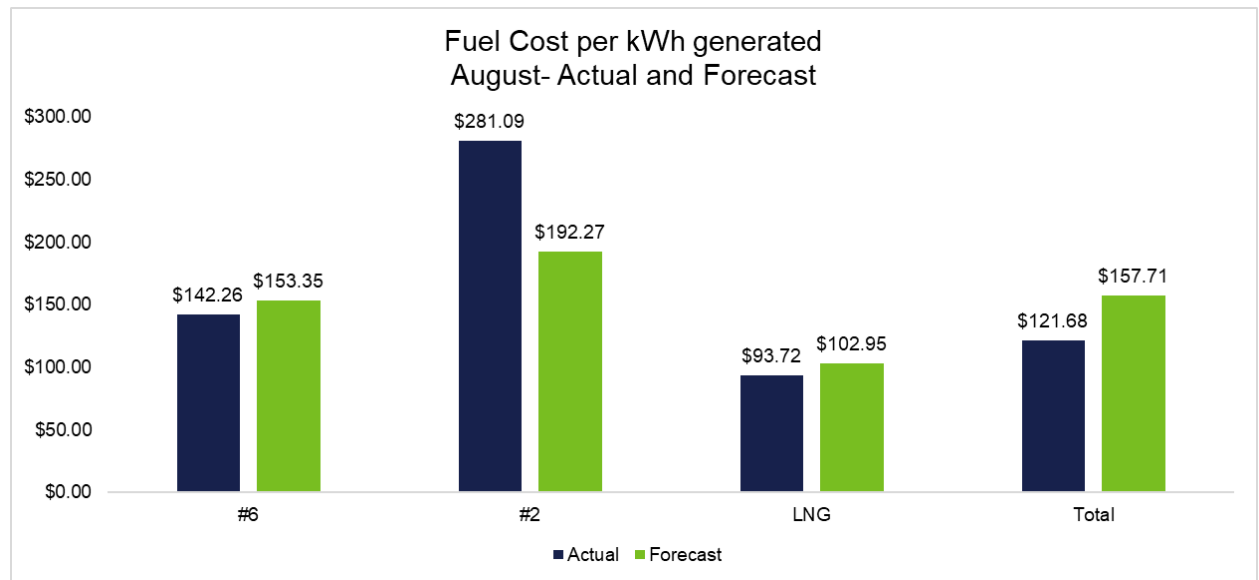


Table 1-1 July and August 2025 Forced or Unplanned Outage Occurred

UNIT	DATE/TIME OUT	DATE/TIME IN	DURATION (H:M)	OUTAGE	CAUSE OF OUTAGE
COSTA SUR 5	7/4/25 0:39	7/8/25 19:54	115:15	CONTROLLED FO	BOILER RUPTURE
AES 1	7/8/25 10:23	7/10/25 22:35	60:12	CONTROLLED FO	AIR INFILTRATION IN ELECTROSTATIC PRECIPITATOR
AES 2	7/8/25 10:00	7/8/25 11:35	1:35	TRIP	NSST 2 TRIP
SAN JUAN CT 6	7/9/25 0:08	7/10/25 16:16	40:08	CONTROLLED FO	PROBLEM WITH DIESEL COMBUSTORS
SAN JUAN CT 6	7/11/25 5:05	7/11/25 9:07	4:02	TRIP	GENERATOR LOCKOUT
AGUIRRE 2	7/11/25 5:55	7/17/25 14:17	152:22	TRIP	FIRE IN MPT 2
AES 1	7/15/25 8:59	7/18/25 6:23	69:24	CONTROLLED FO	RUPTURED PIPE OUTSIDE OF HEAT EXCHANGER
SAN JUAN CT 6	7/17/25 23:03	7/19/25 4:45	29:42	CONTROLLED FO	FORCED MAINTENANCE OUTAGE
AGUIRRE 2	7/17/25 14:22	7/17/25 14:28	0:06	TRIP	UNKNOWN
PALO SECO 3	7/21/25 11:16	7/21/25 15:56	4:40	TRIP	CLOGGED BURNERS
SAN JUAN CT 6	7/24/25 9:54	7/24/25 19:10	9:16	TRIP	GENERATOR LOCKOUT

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SAN JUAN CT 6	7/24/25 20:35	7/24/25 21:53	1:18	TRIP	PROBLEMS WITH EXCITER SYSTEM
SAN JUAN 9	7/24/25 23:09	7/25/25 4:14	5:05	TRIP	RUPTURE IN DISCHARGE FLANGE
SAN JUAN CT 6	7/25/25 3:05	7/25/25 13:48	10:43	TRIP	FIELD GROUND ALARM
SAN JUAN CT 6	7/26/25 5:21	7/26/25 14:22	9:01	TRIP	FIELD GROUND ALARM
SAN JUAN 9	7/27/25 8:36	7/28/25 8:55	24:19	CONTROLLED FO	RUPTURE IN BOILER MUD DRUM LINE
SAN JUAN 9	7/28/25 9:07	7/28/25 10:31	1:24	TRIP	PROBLEMS WITH VALVES
SAN JUAN CT 6	7/28/25 12:54	7/29/25 19:07	30:13	CONTROLLED FO	CHLORIDE PASS
COSTA SUR 6	7/31/25 22:36	8/3/25 23:29	72:53	CONTROLLED FO	AIR HEATERS OBSTRUCITON
COSTA SUR 6	8/4/25 11:36	8/5/25 14:42	27:06	CONTROLLED FO	RUPTURE IN MAINSTREAM PIPE
AGUIRRE 2	8/8/25 23:51	8/12/25 20:45	92:54	CONTROLLED FO	PROBLEMS WITH BOILER
AES 1	8/14/25 9:13	8/16/25 8:03	46:50	CONTROLLED FO	COOLING WATER SYSTEM
SAN JUAN CT 6	8/14/25 17:51	8/25/25 22:10	268:19	TRIP	FIRE SYSTEM ACTIVATION IN HOT PATH AREA
AGUIRRE 2	8/15/25 11:02	8/15/25 20:44	9:42	CONTROLLED FO	RUPTURE IN RADIATOR AND MPT OIL LEAK
SAN JUAN 9	8/18/25 15:31	8/19/25 5:11	13:40	TRIP	BANK 115/38KV SAN JUAN TRIP
SAN JUAN STM 5	8/20/25 9:05	8/20/25 15:14	6:09	TRIP	UNKNOWN
AGUIRRE 2	8/21/25 17:17	8/21/25 20:17	3:00	TRIP	FAULT IN DC CIRCUIT OF BOILER BURNERS
AGUIRRE 2	8/21/25 20:35	8/21/25 21:01	0:26	TRIP	UNKNOWN
SAN JUAN CT 6	8/26/25 23:27	8/28/25 17:26	41:59	CONTROLLED FO	MITSUBISHI REQUESTED THE UNIT TO BE TAKEN OUT TO INSPECT BEARING
SAN JUAN CT 6	8/28/25 22:56	9/2/25 12:24	109:28	CONTROLLED FO	MITSUBISHI REQUESTED THE UNIT TO BE TAKEN OUT FOR INSPECTION WORKS
AGUIRRE 2	8/31/25 8:46	8/31/25 18:13	9:27	CONTROLLED FO	RUPTURE IN SUPER HEATER SPRAY

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Supplemental Response: RFI-LUMA-MI-2020-0001-20250919-PREB-1.2

SUBJECT

Economic Dispatch

REQUEST

During the months of July and August 2025 were any generating units run for system reliability reasons and/or because of system constraints outside of normal economic dispatch in which the lowest variable cost units are called upon first to meet load? If so, identify the days and hours in which non-economic dispatch occurred and explain the related reasons. During the months of July and August 2025 were there any hours in which sufficient generating and purchased power resources were not available to meet system demand? If so, identify the days and hours in which the available generating and purchased power resources were insufficient to fully supply the system demand and explain the related reasons why sufficient resources were not available during those hours.

RESPONSE

This response supplements the response provided on September 24, 2025 with the identification number RFI-LUMA-MI-2020-0001-20250919-PREB-1.2.

Yes, during the months of July and August 2025, certain generating units were operated outside of normal economic dispatch due to system reliability and transmission constraints. These actions were necessary to maintain grid stability. For the days and hours in which non-economic dispatch occurred, please refer to the following table:

Table 2-2. Summary of Non-Economic Dispatch Events

UNIT	DATE/TIME OUT	DATE/TIME IN	DURATION (H:M)	OUTAGE	DESCRIPTION
DAGUAO 1-1	8/31/25 16:07	8/31/25 23:24	7:17	TRANSMISSION EVENT	HELP STABILIZE SYSTEM BETWEEN SABANA LLANA AND RIO BLANCO DUE TO LOSS OF BUS 1 115KV SABANA LLANA AFFECTING SUPPLY TO LINE 36800 AND LINE 41200 TO CANOVANAS. EVENT STARTED AT 1541 H TO 1833 H. UNIT REMAINS ONLINE AFTER EVENT CONCLUSION DUE TO SPINNING RESERVE REQUIREMENTS.

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DAGUAO 1-2	8/31/25 16:23	8/31/25 23:28	7:05	TRANSMISSION EVENT	HELP STABILIZE SYSTEM BETWEEN SABANA LLANA AND RIO BLANCO DUE TO LOSS OF BUS 1 115KV SABANA LLANA AFFECTING SUPPLY TO LINE 36800 AND LINE 41200 TO CANOVANAS. EVENT STARTED AT 1541 H TO 1833 H. UNIT REMAINS ONLINE AFTER EVENT CONCLUSION DUE TO SPINNING RESERVE REQUIREMENTS.
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Yes, during the months of July and August 2025, there were specific hours during which available generating and purchased power resources were insufficient to fully meet system demand. For the days and hours in which available generating and purchased power resources were insufficient to fully meet demand, please refer to the following table 2-2.

Table 2-2. Instances of Insufficient Generation and Purchased Power to Meet System Demand

DATE/TIME START	DATE/TIME END	DURATION (H:M)	DESCRIPTION
7/8/25 19:53	7/8/25 20:20	0:27	GENERATION SHORTFALL TRIGGER BY LIMITATION OF AES 2 AT 190 MW DUE TO RAMPING UP PROCESS AFTER TRIP AT 1002 H DUE TO PROBLEMS DURING AUXILIARY EQUIPMENT TRANSFER FROM AES 1.
7/11/25 6:02	7/11/25 7:26	1:24	GENERATION SHORTFALL TRIGGER BY TRIP OF AGUIRRE 2 AT 0555 H DUE TO FAULT AT MPT GROUND CABLE AND RADIATOR RUPTURE.
7/11/25 20:10	7/11/25 20:40	0:30	GENERATION SHORTFALL TRIGGER BY TRIP OF AGUIRRE 2 AT 0555 H DUE TO FAULT AT MPT GROUND CABLE AND RADIATOR RUPTURE.
7/15/25 19:44	7/15/25 21:03	1:19	GENERATION SHORTFALL TRIGGER BY FORCED OUTAGE OF AES 1 AT 0859 H DUE TO FBHE RUPTURE.
7/29/25 18:25	7/29/25 20:42	2:17	GENERATION SHORTFALL TRIGGER BY LIMITATION OF AGUIRRE 2 FROM 279 MW TO 68 MW AT 1743 H DUE TO LOSS OF VACUUM PUMP.
8/14/25 20:23	8/14/25 21:12	0:49	GENERATION SHORTFALL TRIGGER BY TRIP OF SAN JUAN CT 6 AT 1751 H DUE TO FIRE SYSTEM ACTIVATION AT HOT PATH AREA AND LIMITATION OF AGUIRRE 2 FROM 350 MW TO 249 MW AT 2013 H DUE TO GENERATOR TEMPERATURE AFFECTING REACTIVE POWER OUTPUT.
8/15/25 17:28	8/15/25 22:39	5:11	GENERATION SHORTFALL TRIGGER BY FORCED OUTAGE OF AGUIRRE 2 AT 1102 H DUE TO MPT OIL LEAKAGE.
8/18/25 20:28	8/18/25 20:31	0:03	GENERATION SHORTFALL TRIGGER BY TRIP OF SAN JUAN TM 2, 3 AND 6 AT 2028 H DUE TO MOBILE REGAS PUMP PROBLEMS.

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8/21/25 17:19	8/21/25 21:39	4:20	GENERATION SHORTFALL TRIGGER BY TRIP OF AGUIRRE 2 AT 1717 H DUE TO FAULT AT DC CIRCUIT OF BOILER BURNERS.
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Supplemental Response: RFI-LUMA-MI-2020-0001-20250919-PREB-1.12

SUBJECT

CBES & ASAP

REQUEST

Provide all invoices and documentation that justify the amounts spent on the CBES and ASAP Implementation for July and August 2025.

RESPONSE

This response supplements the response provided on September 24, 2025 with the identification number RFI-LUMA-MI-2020-0001-20250919-PREB-1.12.

ASAP

Please refer to the tables below for the Accelerated Storage Addition Program (ASAP) July and August 2025 invoices. As previously approved, these amounts represent PREB-approved Optimal scenario expenditures. Please note that July and August invoices represent a one-month lag trend.

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July 2025 Invoices	Amounts (\$)	Attachments	Comments
18374479	██████	T15313.093_18374479	The full amount of this invoice corresponds to the ASAP Program.
18374481	██████	T15313.193_18374481	The full amount of this invoice corresponds to the ASAP Program.
541	██████	(541) - ASAP - US Work - Consolidated Invoice	Most of the amounts in this invoice correspond to the ASAP Program (totaling the amount in the second column of this row); those charges Highlighted in RED are not from the ASAP program but, rather, from other matters and are not included in the program costs.
542	██████	(542) - ASAP - PR Work - Consolidated Invoice	Most of the amounts in this invoice (totaling the amount shown in the second column of this row) correspond to the ASAP Program; those charges Highlighted in RED are not from the ASAP program but, rather, for other matters and are not included in the program costs.
488	██████	Reclass Template - FY25 Aug, Sep 2024 - to cc 788 from ASAP	This amount was reallocated to the center cost (not ASAP), and credits were provided to the ASAP Program in July 2025. The invoice is not included because it is not related to the ASAP Program. The template for reclassification is included.
Total	██████		

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August 2025 Invoices	Amounts (\$)	Attachments	Comments
550	██████████	(550) - ASAP Development - US Work - Consolidated Invoice	Most of the amounts in this invoice (totaling the amount in the second column of this row) correspond to the ASAP Program; those charges Highlighted in RED do not correspond to ASAP but, rather, to other matters and were not included in the program costs.
551	██████████	(551) - ASAP Development - PR Work - Consolidated Invoice	Most of the amounts in this invoice (totaling the amount in the second column of this row) correspond to the ASAP Program; those charges Highlighted in RED do not correspond to ASAP but, rather to other matters and were not included in the program costs.
556	██████████	(556) - Regulatory Support - PR Work - Consolidated Invoice	Only those amounts in this invoice, which are Highlighted in GREEN , (and total the amount shown in the second column of this row) correspond to ASAP; the remaining charges are related to other matters and were not included in the program costs.
18375092	██████████	T15313.091_18375092	The full amount of this invoice corresponds to the ASAP Program.
18374480	██████████	T15313.191_18374480	The full amount of this invoice corresponds to the ASAP Program.
18382112	██████████	T15313.091_18382112	The full amount of this invoice corresponds to the ASAP Program.
18381778	██████████	T15313.093_18381778	The full amount of this invoice corresponds to the ASAP Program.
18381779	██████████	T15313.191_18381779	The full amount of this invoice corresponds to the ASAP Program.
Total	██████████		