GOVERNMENT OF PUERTO RICO PUBLC SERVICE REGULATORY BOARD PUERTO RICO ENERGY BUREAU

IN RE: REVIEW OF THE PUERTO RICO ELECTRIC POWER AUTHORITY'S 10-YEAR INFRASTRUCTURE PLAN – DECEMBER 2020 **CASE NO.:** NEPR-MI-2021-0002

SUBJECT: Resolution and Order on PREPA's June 24 Motion.

RESOLUTION AND ORDER

I. Relevant Factual Background

As requested by the Energy Bureau of the Puerto Rico Public Service Regulatory Board ("Energy Bureau"), on June 7, 2019, the Puerto Rico Electric Power Authority's ("PREPA") submitted to the Energy Bureau an updated proposed integrated resources plan ("IRP").¹ The Proposed IRP was evaluated by the Energy Bureau in a comprehensive adjudicative proceeding under Case No.: CEPR-AP-2018-0001. On August 24, 2020, the Energy Bureau issued a final resolution and order, approving in part the Proposed IRP.² The Approved IRP includes a Modified Preferred Resource Plan ("Action Plan") considering, among others, specific planning parameters for the power generation capacity additions³ and retirements.⁴

As part of the captioned case, the Energy Bureau evaluates capital investment projects proposed by PREPA for consistency with the Approved IRP. On June 4, 2022, the Energy Bureau issued a Resolution and Order ("June 4 Resolution") to address certain proposed projects previously classified as Deferred Generation Projects.⁵

Through the June 4 Resolution, the Energy Bureau determined that five (5) of the fifteen (15) Deferred Generation Projects submitted through multiple motions⁶ filed in the instant case are consistent with the Approved IRP.⁷ Such projects are identified under Scope of Works ("SOWs") No. 4073, 4075, 4080, 1012, and 1019. The Energy Bureau noted that its approval represents an investment of **\$4,270,766.60**, based on the proposed scope of works presented by PREPA.⁸

² Final Resolution and Order on the Puerto Rico Electric Power Authority's Integrated Resource Plan, In re. Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, Case No. CEPR-AP-2018-0001, August 24, 2020 ("Approved IRP"). Minor modifications and/or clarifications to the Approved IRP were introduced through a Resolution and Order on Reconsiderations issued by the Energy Bureau on December 2, 2020, in case: In re. Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, Case No. CEPR-AP-2018-0001.

³ Id., ¶¶847-867, pp. 263-269.

⁴ *Id.*, ¶¶869-873, pp. 270-271.

⁵ In re: Review of the Puerto Rico Electric Power Authority's 10-Year Infrastructure Plan – December 2020, Resolution and Order, January 4, 2022.

⁶ In re: Review of the Puerto Rico Electric Power Authority's 10-Year Infrastructure Plan – December 2020, Partial Compliance with the January 4 Order and Request for Extension of Time filed on January 13, 2022 ("January 13 Motion"), Motion to Submit Additional Generation Projects SOWs ("January 25 Motion"), Second Motion to Submit Additional Generation Projects SOWs ("January 28 Motion"), Third Motion to Submit Additional Generation Projects SOWs ("January 28 Motion"), Third Motion to Submit Additional Generation Projects SOWs filed on January 28, 2022 ("January 28 Motion"), Third Motion to Submit Additional Generation Projects SOWs ("February 2 Motion"), Fourth Motion to Submit Additional Generation Projects SOWs filed on February 8, 2022 ("February 8 Motion"), and Motion to Complete Generation Projects SOWs Submittal and Partial Responses to RFI and Request for Extension of Time to Submit Additional Responses to RFI ("February 14 Motion").

⁷ June 4 Resolution, p. 4.

⁸ January 25 Motion, February 2 Motion, and February 8 Motion.





¹ PREPA's Motion to Leave File IRP Main Report "ERRATA" Version, dated June 14, 2019, which included a corrected version of the Main IRP Report submitted on June 7,2019, and is titled Integrated Resource Plan 2018-2019, Draft for the Review of the Puerto Rico Energy Bureau, Prepared for the Puerto Rico Electric Power Authority, June 7, 2019 (Rev. 2.1), In re. Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, Case No. CEPR-AP-2018-0001 ("Proposed IRP").

Through the June 4 Resolution, the Energy Bureau also determined not to approve eight (8) projects under SOWs No. 1016, 1021, 1022, 1027, 1028, 2029, 4070 and 6088 (the "Denied Generation Projects").⁹ The Energy Bureau addressed the Denied Generation Projects considering the extent of the proposed works in their corresponding power plants, in relation to the Approved IRP.

Regarding the projects proposed under SOWs No. 1016, 1021, 1022, 1027, and 1028, the Energy Bureau determined that they comprise major works at the San Juan Power Plant Units 7, 8, and 10 (collectively, the "San Juan Power Plant Deferred Projects"), and noted that some of those units were not even considered as available resources for the purposes of the Approved IRP, while others are within the retirement schedule for years 2021-2025.¹⁰ Since the San Juan Plant Deferred Projects were directed at extending the useful life beyond such schedule, the Energy Bureau determined that the San Juan Power Plant Deferred Projects are not supported by the Approved IRP.¹¹

The Energy Bureau also considered that PREPA did not include in the Proposed IRP major works to comply with the environmental regulations, including MATS¹² and SO₂-NAAQS,¹³ and therefore, the scope and estimated costs of the extension of the useful life of the generation facilities were not a part of the modeling of the Proposed IRP.¹⁴

Regarding SOWs No. 2029 and 4070, the Energy Bureau determined that such projects comprise major repair, rebuilding, rehabilitation, and/or replacement works at Aguirre Plant (Steam Unit #1) and Palo Seco Plant (Steam Unit #3), respectively.¹⁵ The Energy Bureau further stated that these power plants are not in acceptable operational conditions, do not comply with MATS and would require a non-economically viable capital investment to reach MATS compliance and acceptable operational conditions.¹⁶ The Energy Bureau determined that SOW 2029 and 4070 are aimed at extending Aguirre Plant (Steam Unit #1) and Palo Seco Plant (Steam Unit #3) beyond 2025, until 2028 and 2029, which is not supported by the Approved IRP.¹⁷

Regarding the project proposed under SOW 6088 ("Cambalache Power Plant Deferred Project"), the Energy Bureau determined that it comprises major works at Cambalache Plant (Gas turbine GT-1), which was excluded from the Proposed IRP as an available generation resource because it is not planned to be returned to operating condition in the foreseeable future.¹⁸ Therefore, the Energy Bureau determined that is inconsistent with the Approved IRP.¹⁹

On June 24, 2022, PREPA filed an *Urgent Motion for Reconsideration of the June 4 Order* ("June 24 Motion"). PREPA attached certain documents to the June 24 Motion, identified: <u>Exhibit 1</u>, *Programa de Conservación, Calderas y Turbo-generadores*; <u>Exhibit 2</u>, *Generation Directorate*,

¹⁰ Id., pp. 6-7.

¹¹ Id.

¹² Mercury and Air Toxics Standards ("MATS").

¹³ National Ambient Air Quality Standard (NAAQS) for SO₂ ("SO₂-NAAQS").

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June 4 Resolution, p. 7.

¹⁵ *Id.*, pp. 6-7.

¹⁶ Id.

¹⁷ Id., pp. 6-7.

¹⁸ *Id.*, p. 7.

¹⁹ Id.



⁹ June 4 Resolution, p. 7.

Maximum Generation Output Monthly Peak December 2016–December 2022; <u>Exhibit 3</u>, *Informe de Salidas Unidad 1, Periodos 2019 al 2022;* <u>Exhibit 4</u> is an untitled table that seems to include information with certain outages of the steam unit 3 of the Palo Seco Steam Plant. Through the June 24 Motion, PREPA requests the Energy Bureau to: (i) stay its decision in relation to the Denied Generation Projects; (ii) schedule a technical conference to further discuss each of those proposed projects; (iii) reconsider its decision to deny such projects and approve them.

In the June 24 Motion, PREPA alleges that approving the Denied Generation Projects would prevent certain events related to generation shortfalls.²⁰ PREPA also argues that the Denied Generation Projects would ensure efficient compliance with the scheduled maintenance and repair program for PREPA's generation assets, and that they are aligned with the Approved IRP.²¹

PREPA states that, with the Energy Bureau's leave, it would seek Federal Emergency Management Agency's ("FEMA") reimbursement of the costs associated with the Denied Generation Projects.²² Therefore, PREPA argues that this action would allow the People of Puerto Rico" to "have a more reliable generation system at no cost while renewables are integrated".²³ Moreover, PREPA asserts that its dependable available generation capacity is insufficient to comply with the minimum reserve requirements.²⁴ Consequently, PREPA states that, if one significant forced outage occurs, it may not have available generation to cover the demand and reserve requirements.²⁵

In the June 4 Motion, PREPA also discusses why each one of the Denied Generation Projects should be approved.

III. Analysis

A. Prevention of Load-Shedding Events

In the June 24 Motion, PREPA argues that approving the Denied Generation Projects is necessary to maintain the operating generating units, and that such projects are not meant to upgrade or extend the life of PREPA's generating units beyond the expected retirement schedule.²⁶ Accordingly, PREPA states that the Denied Generation Projects are aligned with the Approved IRP.²⁷ PREPA also argues that the Denied Generation Projects are needed to prevent generation loss, reduce forced outages, increase the availability, and therefore, to avoid load-shedding events, brownouts and blackouts.²⁸

PREPA included in the June 24 Motion a table that shows examples of generation forced outages that occurred last year which caused load shedding events ("Load Shedding Events Summary").²⁹ The Energy Bureau examined the Load Shedding Events Summary, which shows that, between September 6, 2021, and October 8, 2021, PREPA experienced nine (9) load shedding events caused by forced outages. Nevertheless, the Load Shedding Events

²¹ *Id.*, p. 10, 18-20.

²² Id., p. 22.

²³ Id.

²⁴ Id., pp. 14-15.

²⁵ Id.

²⁶ *Id.*, p. 10, ¶14.

²⁷ *Id.*, pp. 18-20, ¶28-¶30.

²⁸ *Id.*, p. 10.

²⁹ *Id.*, pp. 12-13.



²⁰ June 24 Motion, pp. 10-14.

Summary does not describe any recent forced outage events causing load shedding, nor previous events. PREPA only included incidents that occurred during 2021 for a limited period of thirty-two (32) days.

The Energy Bureau does not minimize the events described in the Load Shedding Events Summary because it is aware of the consequences that such events had in the health, economy, security, and other important aspects for PREPA's customers. However, it appears from the Load Shedding Events Summary that forced outages of such magnitude constitute isolated incidents. PREPA has not shown the Energy Bureau that its generation units have suffered forced outages of similar proportions or characteristics after the ones that occurred during September and October of 2021, or even before. PREPA has not established that these events are subject to repetition because of the negation of the Denied Generation Projects. Rather, the Energy Bureau considers that such load shedding events resulted from unlikely events, like the coincidental maintenance of various generation units, and thus, they were not the consequence of the generation shortfalls alleged by PREPA.

The Energy Bureau does not believe that the Load Shedding Events Summary presents a convincing argument regarding the need of the Generation Denied Projects. Besides, the Energy Bureau does not concede that all the Denied Generation Projects are aligned with the Approved IRP and Modified Action Plan. Nevertheless, certain Denied Generation Projects deserve reconsideration.

B. Reimbursement of Projects Costs Expenses by FEMA

In the June 24 Motion, PREPA recognizes that the total expenses in connection with the Denied Generation Projects are around \$83,472,452.95.³⁰ Nevertheless, PREPA avers that, since it does not have enough funds to cover such expenses, with the Energy Bureau's leave, PREPA would submit to FEMA the mentioned repairs for reimbursement.³¹ Therefore, PREPA affirms that "the People of Puerto Rico will have a more reliable generation system at no cost while renewables are integrated".³² We first want to clarify that, who will pay for the projects is irrelevant to the Energy Bureau's determination of projects' consistency with the Approved IRP. If a project is not consistent with the Approved IPR, it matters little who would cover its costs.

Despite PREPA's affirmation, the Energy Bureau deems that FEMA's reimbursement of the total expenses pertaining to the Denied Generation Projects is uncertain. There is no assurance that FEMA will cover the cost of such projects. PREPA cannot assert that approving the Denied Generation Projects will have no cost for the People of Puerto Rico.

Further, as PREPA recognizes, even if FEMA covered the total expenses regarding the Denied Generation Projects, it would most likely be only a percentage of the total costs and through the reimbursement of funds. PREPA would have to initially assume the cost of the Denied Generation Projects. However, PREPA states it does not have sufficient funds to cover the expenses. Therefore, the Energy Bureau deems that, even if FEMA reimbursed the full expenses related to the Denied Generation Projects, PREPA may not be able to make the initial investment necessary for their development, unless agreed otherwise with FEMA which may advance payments to commence the projects.

The Energy Bureau reiterates that, even if PREPA could initially cover the costs regarding the development of the Denied Generation Projects or obtain advance payments from FEMA to commence the projects, the issue for the Energy Bureau to resolve through this Resolution and Order is whether such projects are consistent with the Approved IRP or not. Therefore, FEMA's reimbursement of the expenses pertaining to the Denied Generation Project is not the criterion under which the Energy Bureau would approve them.

³⁰ Id., p. 22, ¶34.

³¹ Id. ³² Id.



C. Operating Reserve Capacity

(i) PREPA's Average Reserve Margin for the First Months of 2022

Through the June 24 Motion, PREPA states that LUMA's System Operation area has assigned the classification of "forced outages" to all non-planned outages of Puerto Rico's generating units³³ that reduce the operating reserve below the minimum level calculated according to the Policy on Reserves (POR), which can result in the minimum reserves of around 750 MW.³⁴ Regarding such reserves, PREPA avers that its dependable available generation capacity does not comply with the minimum reserve requirements, since its reserve margins for the first months of this year averaged 572 MW, which is lower than what LUMA requires.³⁵

In support of its conclusion, PREPA refers to <u>Exhibit 1</u> to the June 24 Motion.³⁶ According to <u>Exhibit 1</u>, PREPA's reserve margins for first five (5) months of this year are: (i) 905 MW for January; (ii) 726 MW for February; (iii) 762 MW for March; (iv) 195 MW for April; and (v) 272 MW for May. As discussed, PREPA asserts these reserve margins result in an average of 572 MW. Nevertheless, on the months of April and May, PREPA's reserve margins were 195 MW and 272 MW, respectively. Such margins are well below those of January, February, and March, and therefore, have a significant impact on the calculation of the average reserve margin for the first months of this year. If the reserve margins in April and May had been like those of January, February and March, the average reserve margin for the first five (5) months of 2022 would be considerably higher. In addition, commencing on July 2022, the reserve margins are expected to be above the 750 MW reserve margins.³⁷

PREPA, however, did not explain the reasons for which the reserve margins for April and May 2022 are notably lower than the ones for previous months. PREPA did not include as part of <u>Exhibit 1</u> the reserve margin levels for 2021 or previous years.

Because of the insufficient information provided by PREPA, the Energy Bureau deems that the reserve margins of April and May 2022 are not representative of PREPA's actual reserve margins. Therefore, the average reserve margin for 2022 informed by PREPA cannot be a basis to conclude that PREPA's average reserve margin is below the required minimum. Nevertheless, this is not relevant for the determination of the Energy Bureau regarding the June 24 Motion, since the matter before the Energy Bureau is if the Approved IRP supports the approval of the Deferred Generation Projects or not.

(ii) Increase in Maximum Generation Output Monthly Peak

PREPA argues that <u>Exhibit 2</u> to the June 24 Motion shows that peak demand (i.e. maximum generation output peak) is not lowering, but, it is "consistently increasing".³⁸ In that regard, PREPA states that year 2016 is an example of a trend that will probably be repeated this year.³⁹ PREPA further avers that, when comparing the peak demand in 2021 with this year's, the peak demand has been increasing.⁴⁰ Therefore, PREPA argues that the reduction of availability of the generation units would be inconsistent with such an increase.⁴¹

³⁷ June 24 Motion, Exhibit #1.

³⁸ June 24 Motion, pp. 15-16, ¶23.

³⁹ Id.

⁴⁰ Id.

⁴¹ Id.



³³ Both PREPA's and the independent power producers' units.

³⁴ June 24 Motion, pp. 14-15, ¶21.

³⁵ Id.

³⁶ Id.

In relation with <u>Exhibit 2</u> to the June 24 Motion, PREPA asserts that the Energy Bureau should not consider the last months of 2017 nor the first months of 2018, since the impact of hurricanes Irma and María caused limited availability of the transmission and distribution systems, the demand was reduced, and therefore, the generation output was reduced.⁴² PREPA further states that year 2020 should not be considered to assess trends, since there were multiple lockdowns, which reduced the demand.⁴³ Moreover, PREPA argues that it must be considered there were several brownouts and load-shedding events in the last months of 2021.⁴⁴ PREPA also states that <u>Exhibit 2</u> shows a lower peak in April 2022 than April 2021, since there was a major outage in that month, caused by a transmission event.⁴⁵

The Energy Bureau examined <u>Exhibit 2</u> to the June 24 Motion. From <u>Exhibit 2</u>, however, even considering PREPA's propositions regarding years 2017, 2018, 2020 and 2021, there has not been a consistent increase of peak demand. For example, the peak demand for the month of March 2022, was lower than that of March, 2016, 2017 and 2021, and was almost equal to the peak demand of March, 2019.⁴⁶

It must also be noted that the peak demand for the first five (5) months of 2022 was lower than that of the same months of 2016.⁴⁷ This is also true for every month of 2021 in comparison with 2016.⁴⁸ The peak demand for January through August of 2021 was lower than the peak demand of January through August of 2017 (before hurricanes Irma and María).⁴⁹ The same is true for the months of January through May of 2022 in comparison with 2017.⁵⁰

In accordance with the above, the peak demand of 2022 has been lower than the one in 2016, which is the first year considered in <u>Exhibit 2</u> to the June 24 Motion. The Energy Bureau does not ignore that three (3) of the first five (5) months of 2022 had a higher peak demand than the same months of 2021. Nevertheless, such a difference is not construed by the Energy Bureau as a significant increase in peak demand. The Energy Bureau deems that <u>Exhibit 2</u> does not show a trend in the increase of peak demand. Rather, <u>Exhibit 2</u> demonstrates that peak demand is lower than six (6) years ago.

The Energy Bureau does not believe that PREPA has provided a convincing argument regarding an increase in peak demand. PREPA's peak demand argument is misplaced. In any case, that showing is proper of an IRP-like process; not in this case in which the Energy Bureau is only examining if the Deferred Generation Projects are consistent with the Approved IRP.

D. SOWs No. 2029 (Aguirre Power Plant), 4069 and 4070 (Palo Seco Steam Plant)

The Energy Bureau has reevaluated its determination about the proposed projects in the Aguirre Power Plant and the Palo Seco Steam Plant under SOWs No. 2029, 4069 and 4070("Aguirre and Palo Seco Power Plants Deferred Projects"). After reviewing SOWs No. 2029, 4069 and 4070, and all the information provided by PREPA, the Energy Bureau **DETERMINES** to approve the Aguirre and Palo Seco Power Plants Deferred Projects.

⁴² *Id.*, p. 16, note 6.
⁴³ *Id.*⁴⁴ *Id.*⁴⁵ *Id.*⁴⁶ See, June 24 Motion, Exhibit 2.
⁴⁷ *Id.*⁴⁸ *Id.*⁴⁹ *Id.*⁵⁰ *Id.*



The SOWs pertaining to the Aguirre and Palo Seco Power Plants Deferred Projects include descriptions and justifications for the corresponding units, the type of project and the corresponding Codes and Standards affected. Therefore, in reconsideration, the Energy Bureau **APPROVES** the Aguirre and Palo Seco Power Plants Deferred Projects, which are described in **Attachment A** of this Resolution and Order. The Energy Bureau notes this approval represents an investment of **\$13,511,914.15** based on the proposed works presented by PREPA through previous motions filed in the instant case.⁵¹

The Energy Bureau **CLARIFIES** that the costs associated with the approved Aguirre and Palo Seco Power Plants Deferred Projects shall be included in PREPA's annual budget in the category of federally funded capital expenditures. PREPA shall not incur in any expenses related to the projects under SOWs No. 2029, 4069 and 4070, until the receipt of FEMA's approval for the execution of those projects.

IV. Conclusion

The Energy Bureau **APPROVES** the projects described in **Attachment A** of this Resolution and Order, which shall be presented to FEMA and COR3⁵² to finalize the approval process. PREPA will need to include such projects as part of its federally funded capital expenditures.

The projects were approved based on the information provided by PREPA. Should the scope of the project change, PREPA **SHALL** immediately seek the Energy Bureau's approval of such changes.

The Energy Bureau **ORDERS** PREPA to (i) submit to the Energy Bureau copy of the approval by COR3 and/or FEMA of the projects in **Attachment A** of this Resolution and Order, which shall contain the costs obligated for each project, **within ten (10) days of receipt of such approval**; (ii) provide the Energy Bureau the actual contracted cost to construct each project approved in such Attachment A, **within ten (10) days from the execution of the contract**; and (iii) inform the Energy Bureau once the projects are completed.

The Energy Bureau continues analyzing SOWs 1016, 1021, 1022, 1027, 1028 and 6088.

The Energy Bureau reiterates the directive instated in the March 26 Resolution,⁵³ which remains unaltered, related to the submission of projects before the Energy Bureau at least thirty (30) calendar days before submitting such projects to FEMA and/or COR3.

Be it notified and published.

Edison Avilés Deliz Lillian Mateo Santos Chairman Associate Commissioner



erdinand A. Ramos Soegaard Associate Commissioner

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Sylvia B. Ugarte Araujo Associate Commissioner

⁵¹ See, January 13 Motion, January 28 Motion and February 8 Motion.

⁵³ See, In re: Review of the Puerto Rico Electric Power Authority's 10-Year Infrastructure Plan – December 2020, TO Resolution and Order issued on March 23, 2021 ("March 23 Resolution").

⁵² Puerto Rico Central Office for Recovery, Reconstruction and Resiliency ("COR3").

CERTIFICATION

I hereby certify that the majority of the members of the Puerto Rico Energy Bureau has so agreed on July 21, 2022. I also certify that on July 21, 2022 a copy of this Resolution and Order was notified by electronic mail to the following: laura.rozas@us.dlapiper.com; margarita.mercado@us.dlapiper.com, kbolanos@diazvaz.law; mvazquez@diazvaz.law. I also certify that today, July 21, 2022, I have proceeded with the filing of the Resolution and Order issued by the Puerto Rico Energy Bureau.

For the record, I sign this in San Juan, Puerto Rico, today July 2/2, 2022.

Sonia Seda Gaztambide DEEN Clerk AD 00; 0 UER ۲

SOW NO.	Facility	Project Name	Proposed Scope of Work	Original ⁵⁴ Estimate	Presented ⁵⁵ Estimate	Diff	Page
2029	Aguirre Power Plant	Unit 1 South Wall Boiler Tubing Replacement and Boilers Repairs	Partial rehabilitation of the south water wall between third and fourth floor on Unit 1 consisting of Boiler Tube Panels replacement.	\$7,000,000.00	\$5,983,862.95	\$1,016,137.05	January 28 Motion, Att. A, pp. 262- 339
4069	Palo Seco Steam Plant	PS 3 Procurement and Delivery of Water Wall Boiler Tubes and Economizer Unit PS3	Manufacture, testing, and delivery of the following components of the Unit 3 boiler; the economizer, and the water wall boiler tubes.	\$5,000,000.00	\$4,028,051.20	\$971,948.80	January 13 Motion, Att. A, p. 2764
4070	Palo Seco Steam Plant	PS 3 Low Pressure Turbine Rotor Refurbished, Unit 3	Inspection, transportation, maintenance, and repair of the power turbine spare low-pressure rotor.	\$2,000,000.00	\$3,500,000.00	(\$1,500,000.00)	February 8 Motion, Att. A, pp. 247- 277
			TOTAL	<u>\$14.000.000.00</u>	<u>\$13.511.914.15</u>	<u>\$488.085.85</u>	

Attachment A Works Approved by the Energy Bureau for the Power Plants Permanent Repairs

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⁵⁴ See, In re: Review of the Puerto Rico Electric Power Authority's 10-Year Infrastructure Plan – December 2020, Motion to Submit Fourth Group of Generation Projects ("November 15 Motion").

⁵⁵ Estimates presented trough the January 13 Motion, January 28 Motion and February 8 Motion.