

BEFORE THE GUAM PUBLIC UTILITIES COMMISSION



IN THE MATTER OF:) GPA Docket 15-05
)
The Petition of the Guam Power Authority))
for Approval of Procurement of New) **PUC COUNSEL REPORT**
Generation Combined Cycle Units and to)
Proceed with Implementation of the)
Integrated Resource Plan (IRP).)

INTRODUCTION

1. This matter comes before the Guam Public Utilities Commission ["PUC"] upon the Petition of Guam Power Authority ["GPA"] for Approval of Procurement of New Generation Combined Cycle Units.¹
2. GPA requests approval to procure 120 megawatts of dual fired Combined Cycle generation plant, with an option for an additional 60 megawatts of dual fired Combined Cycle generation plants as needed.²

BACKGROUND

3. This matter was first addressed by the PUC on January 29, 2015.³
4. In the January 29, 2015, Order, the PUC rejected GPA's petition for Approval of Procurement of New Generation Combined Cycle Units "on the grounds that it does not present sufficient evidence that the proposed new generation is justified. Further consideration is deferred pending GPA providing more specific and complete information as requested by the PUC in both the July, 2013 Order related to the IRP and in this Order".⁴
5. GPA was required to submit additional analysis and plans which included an increased emphasis on DSM, renewable energy of both utility and customer scale, financial modeling, and inclusion of the potential impact of specific electric grid related measures to address reliability.⁵
6. GPA's primary justification for procuring combined cycle power plants was that there is a need for GPA to come into compliance with certain environmental

¹ GPA Petition for Approval of Procurement of New Generation Combined Cycle Units, GPA Docket 15-05, filed November 10, 2014.

² Id. at p. 2.

³ PUC Order, GPA Docket 15-05, dated January 29, 2015.

⁴ Id at p. 5.

⁵ Id at p. 6.

regulations issued by the United States Environmental Protection Agency (“USEPA”), which include the RICE-MACT regulations (slow speed generators), EGU-MACT regulations (steam generators), and MATS regulations.⁶

7. Thereafter, between February and August 2015, GPA and the PUC Consultants, Lummus, engaged in an extended discussion concerning GPA’s plans on building new generation units and complying with the USEPA environmental regulations. Lummus submitted numerous Requests for Information to GPA, and GPA presented a number of potential compliance cases “as generation alternatives”. GPA evaluated “case” proposals through use of its “Strategist” program and the development of the Financial Model.
8. On August 21, 2015, the PUC Consultant Lummus issued its Report: Review of GPA Petition to Acquire up to 180MW of New Combined Cycle Capacity in Docket 15-05.⁷
9. In Its August 21, 2015 Report, Lummus Consultants recommended that the PUC reject GPA’s requested Petition. Lummus relied upon the following findings, as well as others, for its recommendation:
 - 1) GPA’s selected Base Case overstates the economic benefits of new generation Compliance Cases and should be updated to reflect low cost compliance plans without the addition of new generation unless the load requires additional resources.
 - 2) GPA’s resource/compliance planning process did not adequately consider a more gradual replacement of its base-load generating assets.
 - 3) GPA’s resource/compliance planning did not adequately address the potential impact of renewable energy and DSM programs on the need for an economic justification of adding 120MW of new CC generating capacity.
 - 4) GPA did not provide sufficient planning for and evaluation of the potential impacts of LNG infrastructure costs within the Financial Model.

⁶ GPA Petition for Approval of Procurement of New Generation Combined Cycle Units, GPA Docket 15-05, filed November 10, 2014, at p. 1-2.

⁷ Lummus Consultants Int’l Report: Review of GPA Petition to Acquire up to 180MW of New Combined Cycle Capacity in Docket 15-05, submitted on August 21, 2015.

- 5) There are various deficiencies in the Strategist and Financial Models used by GPA.
- 6) GPA's analysis of different generation case scenarios (a "base" case and other alternative cases) relied upon a comparison of the present value of annual cost streams to GPA; it may not be appropriate for a municipal authority, such as GPA, to base its decisions on its cost for each case. The evaluation of the revenue requirement stream to customers is more relevant.
- 7) GPA should consider basing its decision to install new capacity on present value from a revenue requirements basis as well as from its internal cost.⁸ A present value analysis should be conducted from the ratepayer perspective based upon revenue requirements rather than upon the cost incurred by the utility.
- 8) In general, GPA's analysis was deficient in examining the rate implications to customers, including capital investment requirements and funding costs. GPA must calculate the customer rate levels in the base case over the long term. Revenue requirements and attendant rates are higher than the capital costs that the utility incurs.
- 9) GPA has not provided a rate impact study for its plan.
10. The major finding of Lummus was that GPA had not justified procurement of new generation capacity. GPA's principal argument has been that the new generation capacity is justified because of GPA's need to comply with USEPA environmental regulations. Lummus found that GPA's analysis and approach required significant modification to produce a low-cost, realistic approach in addressing USEPA requirements in the Base Case (without new generating resources). Based upon the material and evidence presented by GPA, a need for additional generation capacity was not justified.

⁸ Id at pgs. 46-49.

ANALYSIS

11. On August 31, 2015, GPA experienced a major failure of the Cabras 3 & 4 Power Plants when an explosion and fire occurred.⁹
12. GPA's General Manager John Benavente stated his opinion that, subject to a full investigation, Cabras Unit 4 may be irreparable; there is no estimated date for its return to service. He believes that Cabras Unit 3 may be able to produce power by March 2016, but that is subject to further investigation.¹⁰
13. To date, there has been no detailed investigation of the root cause of the explosion, nor any data indicating that Cabras Units 3 & 4 could potentially return to service.
14. The explosion resulted in the loss of 78MW of base load capacity, which places GPA in a difficult position of meeting system demand if there is an outage in one of the base load or other large units. The outage of one of the Cabras Steam Units could result in insufficient generation reserve.¹¹ GPA would have no reserve capacity and would be short approximately 40 to 60MW.¹²
15. GPA postulates that, at present, it does not have a sufficient reserve of generation capacity. Existing capacity is 295MW. Peak demand is 245MW; there is a 50MW reserve capacity available. However, basing necessary reserve on the loss of its two largest units, GPA believes that it needs a required reserve of 94MW. Thus, there is a present shortage in reserve capacity available of 44MW.¹³
16. In its Petition for Procurement of Temporary Power Generation Services in GPA Docket 15-18, GPA sought PUC approval to pursue additional capacity through leasing services for 40-60 MW of stand-by generation to ensure that GPA has sufficient reserves even with the potential outages of the Cabras 1 & 2 Units.¹⁴

⁹ GPA Petition for Approval of Procurement of the Temporary Power Generation Services, GPA Docket 15-18, filed September 17, 2015.

¹⁰ Id at p. 1.

¹¹ Id at p. 1.

¹² Guam Consolidated Commission on Utilities Resolution No.2015-45, Authorizing Management of the Guam Power Authority to Lease Generation Capacity Services to Meet System Demand, adopted September 16, 2015, at p. 1.

¹³ Guam Power Authority Generation Capacity Alternatives, September 16, 2015, Reserve Restoration Plan.

¹⁴ Id.

17. Cabras 1 tripped off on October 14, 2015, causing outages in several areas. This incident was just the latest power outage. The island experienced load shedding the week between September 27 and October 1, 2015, and again the weekend of October 10, 2015.¹⁵
18. GPA GM Benavente has estimated that a total of 42 hours of load shedding has occurred since August 31, 2015.¹⁶
19. It is a general principle that a utility does not need additional generation capacity unless the load requires additional resources. When a utility can show that it needs additional load to serve its customers, it is an appropriate time for the utility to procure additional generation capacity.
20. The monthly and peak load demand figures from 2013 to the present do not demonstrate an overall trend toward increased peak load. The highest peak load this year has been 255MW. The highest peak load in 2013 was 257MW.¹⁷ There has not been an increase in the required load in Guam that would demand more generation capacity. When Lummus submitted its report on August 21, 2015, it found GPA had not made the case that there was any additional need for load capacity or for additional generation. Lummus stated there was no necessary need for additional generation unless the load requires additional resources.
21. As indicated, GPA's justification for new generation was the necessity of meeting USEPA environmental regulations. However, Lummus concluded that GPA had failed to adequately explore low cost compliance plans that did not necessitate the addition of new generation.
22. As a result of the Cabras 3 & 4 explosion on August 31, 2015, circumstances have been considerably altered. In its presentation for temporary generation in GPA Docket 15-18, GPA made the case that existing reserve generation capacity is not sufficient to meet the required load. Over the past two months, there have been a number of instances of outages and load shedding where generation capacity was insufficient to serve the needs of ratepayers.

¹⁵ Interview with GM John Benavente, Guam Post, October 15, 2015,

¹⁶ Id.

¹⁷ Guam Power Authority Generation Capacity Alternatives, Guam Consolidated Commission on Utilities Work Session, October 14, 2015 (Monthly Peak Demand, Jan. 2013 through September 2015 and Historical Peaks).

23. The Reserve Restoration Plan submitted by GPA on October 14, 2015, shows that GPA may have insufficient generation capacity from September 2015, through February 2016 to meet customer demand. The insufficiency ranges from 44MW to 15MW.¹⁸
24. The Reserve Restoration Plan does show that, by March 2017, the reserve generation capacity will be 94MW. However, a number of factors suggest that the PUC cannot be sanguine concerning the availability of future reserve load capacity. Cabras 3 & 4 are both included in the Restoration Plan as being "restored." However, there is no assurance at this point that either plant will be available. Furthermore, the PUC is aware that Cabras 1 & 2 are both over 40 years old, and their future availability is also not certain. These older plants could be subject to outages. It is uncertain and questionable, at present, as to whether GPA possesses sufficient generation capacity to meet the required load.
25. In light of this new situation, it is, perhaps, more prudent for the PUC to err on the side of caution and provide authorization for GPA to procure additional generation capacity.
26. GPA's emergency solution of procuring leased off island generators of 40-60MW is only, at best, a temporary solution. Temporary generation will likely be very expensive. With leasing, GPA does not obtain any permanent generation that will contribute long term to the power system. It would appear to be more advantageous to have GPA put resources into new generation, as opposed to leasing generators for an extended period of time.
27. The ratepayers of Guam should not be placed in the uncertain and fragile position of exposure to load shedding and insufficient load capacity. The PUC must take proactive action to remedy the current generation situation.

RECOMMENDATIONS

28. GPA should be authorized to submit a plan to the PUC, and a proposed procurement, for 120MW of new combined cycle generation. The PUC has a number of options that it could consider. One is to allow GPA to procure 60MW immediately, and an additional 60 when it provides the required Plan. While Counsel does not believe that more than 120MW is justified or should be authorized at present, the PUC could consider additional authorization. Additional issues are: (1) what size units (for example, 30 MW or 60 MW) should be procured? (2) Should

¹⁸ Id.

the procurement be only for combined cycle units? Lummus suggested that GPA's procurement should be broader, and leave to the proponent the specific type of technology to be utilized. (3) What should be the fuel source for the new units? (It is anticipated by GPA that the new units will burn ULSD).

29. As a part of its plan, GPA must include an evaluation of whether Cabras 3 and/or 4 can be returned to service, and if so, when. It is difficult for the PUC to make a rational determination of how many megawatts GPA should be authorized to procure until it is known as to whether those plants will be available for future generation.
30. The availability of Cabras 3 & 4 may also relate to any issue of whether the PUC should provide GPA an option to procure an additional 60MW.
31. There are also other items which GPA must submit to PUC prior to approval of its Plan and Procurement. GPA's submission of its Demand Side Management Program, implementation thereof, and Report on long term funding sources, has been delayed. Lummus has pointed out that GPA has not fully considered the potential for expansion of DSM and its utility in minimizing future load requirements. DSM must be a part of GPA's long term plan on the need for additional generation capacity. Implementation of a more extensive DSM program by GPA could well reduce the necessity for additional load or new generation in the future.
32. GPA's Plan should also include Time of Use Rates to reduce load.
33. GPA's Plan must include a Third Party Condition Assessment of the Cabras 1 & 2 plants and Life Extension Study, or at least a proposal for obtaining such assessment and study. To date, GPA has provided insufficient information to establish that it is not feasible to maintain either one or both of those plants for a number of years into the future.
34. GPA's Plan for 120MW of new generation capacity should be based upon the Independent Power Producer Model rather than upon issuance of revenue bonds and ownership by GPA.
35. GPA appears to have concluded, as evidenced by the new solar plant, that it is preferable for future generation to be operated by third party plant managers/operators. It should place responsibility for new plant generation operation with Independent Power Producers.

36. As a part of its Plan, GPA must provide a detailed analysis of the customer rate impact from a decision to procure 120MW of generation capacity. The PUC is primarily concerned with the ratepayer revenue requirements for the procurement which GPA proposes. GPA must provide additional analysis of the rate implications to customers from the Investment requirements and funding costs. There should be an accurate estimate as possible concerning the total cost for the procurement of additional generation, and the likely impact on customer rates.
 37. GPA's Plan should also provide time lines for necessary environmental permitting, procurement, construction and operation of the new generation facilities.
 38. Another element which should be included in GPA's Plan is the further development of renewable energy resources. Lummus determined that GPA's resource/compliance planning does not adequately incorporate the potential impact of renewable energy. GPA's current projections call for a maximum of 120MW of renewable energy; after that limit is reached, there is no further provision for additional renewable energy resources.
 39. Although GPA has received bids on Phase 2 of its Renewable Procurement, for up to 40MW of renewables, no selection has yet been made on the Phase 2 Procurement. GPA should update the PUC as to when the award(s) for the Phase 2 Procurement will be issued.
 40. GPA is also initiating a solar program with the US Military for development of solar facilities on military land. Further updates should be provided to PUC on this program.
 41. GPA's Plan should also include projected action on its proposed Phase 2 of Energy Storage Systems, which proposed to procure battery storage for solar power. GPA's future proposals and intended actions for implementation of renewables and battery storage for renewables should be included in its Plan. GPA should further explore the introduction of storage facilities to support the intermittency of solar.
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42. At present, the PUC should not approve the Liquefied Natural Gas (LNG) option. Lummus has found that GPA did not provide sufficient planning for and evaluation of the potential impacts of LNG infrastructure costs within its Financial Model. Because of the substantial cost of LNG infrastructure, the PUC should not approve the LNG option the present time.

43. GPA should undertake a present value analysis from the ratepayer perspective based on revenue requirements for the new generation rather than costs incurred by the utility. GPA must provide the PUC with a clear understanding of the rate implications to customers of this Plan, including capital investment requirements and funding costs. GPA must calculate the anticipated customer rate levels over the long term resulting in the procurement of 120MW of combined cycle generation capacity.
44. GPA should consider a more gradual replacement of its base load generating assets. GPA may be able to continue to operate at least one steam unit at Cabras on LSRO: such a decision would provide the opportunity for additional fuel diversity for the Island.
45. In general, GPA must seriously take into account the recommendations of Lummus Consultants in their August 21, 2015, Report, and address those concerns in their Plan.
46. GPA should be required to submit its Plan to the PUC within (120) days from the date of the PUC Order herein. At the time GPA submits its Plan to the PUC, it should also submit its Request for Proposals for the 120MW of combined cycle generation capacity.
47. A Proposed Order is submitted herewith for the consideration of the Commissioners.

Dated this 21^h day of October, 2015.

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