

Estate File Number: 35-2638322  
Court File No.: 35-2638322

**ONTARIO  
SUPERIOR COURT OF JUSTICE  
(COMMERCIAL LIST)  
(IN BANKRUPTCY AND INSOLVENCY)**

**IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A PROPOSAL  
OF KMW ENERGY INC.**

**MOTION RECORD**

May 5<sup>th</sup>, 2020

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TO: Service List

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**TAB 1**



Estate File Number: 35-2638322  
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**ONTARIO  
SUPERIOR COURT OF JUSTICE  
(COMMERCIAL LIST)  
(IN BANKRUPTCY AND INSOLVENCY)**

**IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A PROPOSAL  
OF KMW ENERGY INC.**

**NOTICE OF MOTION  
(returnable May 15, 2020)  
(Motion to Lift Stay of Proceedings)**

Georges River Energy, LLC (“GRE”) will make a Motion to a Judge presiding over the Commercial List at 11:00 a.m. on Friday, May 15, 2020, or as soon after that time as the Motion can be heard, via judicial videoconference in accordance with the change in operations of the Commercial List in light of the COVID-19 crisis and the Chief Justice’s Notice to the Profession dated March 15, 2020. Please refer to the conference details attached as Schedule “A” hereto in order to attend the motion and advise if you intend to join the motion by emailing Sophie Moher at [smoher@cassels.com](mailto:smoher@cassels.com).

**PROPOSED METHOD OF HEARING:** The Motion is to be heard orally.

**THE MOTION IS FOR** an Order:

- (a) Abridging the time for service and filing of this Notice of Motion and Motion Record of GRE and dispensing with service on any person other than those served;

- (b) Lifting the stay of proceedings (the “**Stay of Proceedings**”) established by section 69(1) of the *Bankruptcy and Insolvency Act*, R.S.C. 1985, c. B-3 (the “**BIA**”) to allow GRE to declare KMW Energy Inc. (“**KMW**”) in default and formally terminate KMW’s right to complete the Contract (as defined below) between Georges River Energy, LLC (“**GRE**”) and KMW dated December 6, 2016 ; and
- (c) Such further and other relief as this Honourable Court may deem just.

**THE GROUNDS FOR THE MOTION ARE:**

- (d) On April 11, 2020, KMW filed a Notice of Intention to Make a Proposal (“**NOI**”) pursuant to section 50.4 of the BIA.
- (e) In 2016, Robbins embarked on a construction project to be owned and operated by GRE, a separate entity affiliated with Robbins, for a new co-generation plant that would supply electricity and steam to operate its lumber drying kilns and heat for its buildings.
- (f) Pursuant to a contract (the “**Contract**”) entered into on or about December 6, 2016 between GRE and KMW, KMW was to design, engineer and supply a biomass fired energy system that would result in cost savings to Robbins.
- (g) As required under the Contract, KMW obtained a performance bond (the “**Bond**”) guaranteeing its performance of the Contract. Liberty Mutual Insurance Company (“**Liberty**”) is the surety on the Bond.
- (h) Pursuant to the Contract, KMW recommended and delivered to GRE a steam turbine manufactured by Chola Turbo Machinery (the “**Chola Turbine**”).

- (i) Shortly after the Chola Turbine began operating, it became clear that there were significant problems with it.
- (j) GRE provided formal notice to KMW that the Chola Turbine was non-conforming as well as written notification of its accruing claims for damages against KMW on multiple occasions.
- (k) KMW eventually placed a purchase order (the “**Purchase Order**”) for a replacement turbine, after which KMW sought to compel GRE to settle its accruing claims for damages against KMW. On February 4, 2020, pursuant to the requirements under the Bond, GRE notified KMW and Liberty that it was considering declaring KMW in default under the terms of the Contract.
- (l) On April 8, 2020, GRE again notified Liberty of its intention to terminate the Contract with KMW for default, after concluding that KMW would not be able to meet its obligations under the Contract, including to provide a conforming steam turbine.
- (m) Three days later, on April 11, 2020, these proceedings were commenced. KMW has indicated that its present liquidity crisis and resulting insolvency are the result of difficulties encountered in performing its obligations under the Contract.
- (n) GRE has continued to suffer financially, as a result of damages for engineering, testing, equipment repairs and professional services in order to address the failings of the Chola Turbine. These damages will continue to increase each day that the non-conforming Chola Turbine remains in operation.

- (o) GRE has also experienced significant operational losses due to the Chola Turbine's failure to generate electricity at the level required by the Contract. These damages also continue to increase each day that the non-conforming Chola Turbine remains in operation.
- (p) The relief sought by KMW in its insolvency proceedings before the Ontario Superior Court of Justice, including the proposed stalking horse purchase agreement, makes no provision for KMW's obligation under the Contract.
- (q) GRE cannot continue to sustain the ongoing losses stemming from KMW's delivery of the non-conforming Chola Turbine.
- (r) GRE understands that Liberty will not undertake any obligations with respect to its role as surety under the Bond, until GRE issues a notice of termination of the Contract.
- (s) GRE will be materially prejudiced by the continued operation of the Stay of Proceedings since it cannot issue a notice of termination under the Contract unless the Stay of Proceedings is lifted.
- (t) It is fair and just in all of the circumstances that the Court lift the Stay of Proceedings to allow GRE to issue a notice of termination under the Contract.
- (u) Sections 2, 50.4 and 69 of the BIA.
- (v) Rules 2.03, 3.02, 37 of the *Rules of Civil Procedure*.
- (w) Such further and other grounds as counsel may advise.

**THE FOLLOWING DOCUMENTARY EVIDENCE** will be used at the hearing of the Motion:

- (x) The Affidavit of James A. Robbins, sworn May 1, 2020.
- (y) Such further and other evidence as counsel may advise and this Honourable Court may permit.

**Schedule “A”****Conference Details to join Motion via Teleconference**

Join Zoom Meeting

<https://cassels.zoom.us/j/92256677034?pwd=L2FLY3ZUOFhwVVYzMVICNk9PRFZzQT09>

Meeting ID: 922 5667 7034

Password: 019905

One tap mobile

+15873281099,,92256677034#,,#,019905# Canada

+16473744685,,92256677034#,,#,019905# Canada

Dial by your location

+1 587 328 1099 Canada

+1 647 374 4685 Canada

+1 647 558 0588 Canada

+1 778 907 2071 Canada

+1 438 809 7799 Canada

855 703 8985 Canada Toll-free

Meeting ID: 922 5667 7034

Password: 019905

Find your local number: <https://cassels.zoom.us/u/adCA4X8SmH>

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May 5<sup>th</sup>, 2020**Cassels Brock & Blackwell LLP**

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**IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A PROPOSAL OF KMW ENERGY INC.**

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SUPERIOR COURT OF JUSTICE  
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PROCEEDING COMMENCED AT  
TORONTO

**NOTICE OF MOTION**

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Lawyers for Georges River Energy, LLC

# TAB 2

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**ONTARIO  
SUPERIOR COURT OF JUSTICE  
(COMMERCIAL LIST)  
(IN BANKRUPTCY AND INSOLVENCY)**

**IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A PROPOSAL  
OF KMW ENERGY INC.**

**AFFIDAVIT OF JAMES A. ROBBINS  
(sworn May 1, 2020)**

I, JAMES A. ROBBINS, of the City of Waldo, in the State of Maine, MAKE OATH AND SAY:

1. I am the President of Robbins Lumber, Inc. ("**Robbins**"), which position I have held since 2013. I am also the Treasurer of a separate entity affiliated with Robbins called Georges River Energy, LLC ("**GRE**"). In those capacities I have personal knowledge of the facts to which I depose herein, except where I have indicated that I have obtained facts from other sources, in which case I verily believe those facts to be true.

**Background**

2. Robbins is a fifth generation family-owned business that was established in 1881 and operates a sawmill on a 40-acre site in Searsmont, Maine. Robbins is partnered with a distribution yard in Dartmouth, Nova Scotia. The combined operations employ over 135 individuals.

3. Robbins' operations have, for many years, included a 1.2 megawatt co-generation plant that generated electricity for operations and steam for use in Robbins' kilns to dry lumber and provide heat for the facility.

4. In 2016, Robbins embarked on a project to construct a new co-generation plant that, like its historical co-generation plant, would supply electricity and steam to operate its lumber drying kilns and heat for its buildings (the “**Project**”).

5. A critical factor in planning the Project was to use the mill residuals, such as sawdust, bark and chips, as fuel. This would provide a market for byproducts from independent loggers, landowners and other sawmills which previously had gone to many of Maine’s now-shuttered paper mills.

6. The Project was to be owned and operated by GRE, a separate entity affiliated with Robbins.

7. As part of the Project, GRE planned to purchase and install an 8.5 megawatt steam turbine. GRE planned to sell electricity back into the electrical grid pursuant to a power purchase agreement (the “**Power Purchase Agreement**”) entered into with Central Maine Power Company. In addition, Robbins planned that, upon completion of the Project, it would cease to operate its existing biomass system that was supplying steam to Robbins’ dry kilns.

#### **Contract with KMW**

8. On or about December 6, 2016, Robbins entered into a contract (the “**Contract**”) with KMW Energy, Inc. (“**KMW**”) pursuant to which KMW was to design, engineer and supply a biomass fired energy system (“**System**”). The Contract Price for the System was \$12,825,000 USD. A copy of the Contract is attached hereto as **Exhibit A**.

9. As required by the terms of the Contract, KMW supplied a certain performance bond designated as bond no. BDTO-15002-016 (“**Bond**”) guaranteeing its performance of the Contract. The penal sum of the Bond is 50% of the Contract price or \$6,412,500 USD. Liberty

Mutual Insurance Company (“**Liberty**”) is the surety on the Bond. A copy of the Bond is attached hereto as **Exhibit B**.

10. The System designed by KMW was to be comprised of a boiler (essentially a furnace) that would burn biomass fuel (primarily wood chips) to heat water to generate high-pressure steam. The steam would be used to power a steam turbine and generator supplied by KMW to generate electricity. After passing through the turbine, the steam would be piped to Robbins’ kilns to supply heat to dry its lumber products and heat its buildings.

11. KMW agreed that the co-generation System would meet certain specific design criteria. Specifically, KMW promised that the steam turbine would generate 8.5 megawatts of electricity while providing steam for Robbins’ dry kilns and building heat all the while meeting certain efficiency and emissions standards.

### **The Turbine**

12. During the design phase of the Project, KMW recommended that it provide a steam turbine manufactured by Chola Turbo Machinery located in Bangalore, India (the “**Turbine**” or the “**Chola Turbine**”).

13. Pursuant to “Steam Turbine and Generator Item 661” of the Biomass Field Energy System Proposal attached to the Contract, KMW represented to GRE that Chola Turbo Machinery Turbines are extensively proven and have been approved by General Electric.

14. Based on KMW’s assurances, GRE believed that the Chola Turbine would meet the requirements of the Contract specifically including the performance criteria that KMW agreed to meet.

15. GRE expected that the completed Project would result in a net savings of the cost to generate electricity and steam through a combination of a more efficient system and revenue generated from the Power Purchase Agreement.
16. Under the Contract, KMW agreed to deliver the Turbine and generator on December 19, 2017.
17. KMW delivered the Turbine several months late, on or about March 20, 2018. Upon delivery, the Turbine has to be installed by GRE's contractor and put through a commissioning and start up process by KMW.
18. Operation of the System commenced in October 2018. The Turbine began to generate electricity on November 28, 2018.

#### **Problems with the Turbine**

19. Almost immediately, it became clear that there were significant problems with the Turbine.
20. Among other things, the Turbine failed to generate electricity in the quantity required by the Contract. In addition, after passing through the Turbine, there was insufficient steam left over to supply Robbins' kilns.
21. Because the System failed to generate sufficient steam, Robbins was forced to continue operating its existing biomass system in conjunction to operate its kilns and provide heat for its buildings. As a direct result, Robbins' actual operating costs with the new System are greatly in excess of its anticipated operating costs.
22. In addition, because the Turbine failed to generate as much electricity as anticipated, GRE was unable to sell power and generate anticipated revenue through the Power Purchase Agreement.

23. During the first half of 2019, KMW and GRE undertook significant efforts to investigate the problems with the System.

24. Among other things, GRE hired MD&A Turbine Consultants to inspect and evaluate the Turbine's operations. A copy of the MD&A report dated May 2, 2019 (the "**MD&A Report**"), is attached hereto as **Exhibit C**.

25. At page 3 of the MD&A Report, MD&A noted that:

To date, the steam turbine has not operated at full power for more than several minutes to determine its maximum MW output. The time duration was too short to collect steady data to measure actual efficiency, but preliminary data at partial loads shows a much higher energy input is needed per a unit of output, than specified. As KMW and Chola continue to search for solutions to the known problems for which they are solely responsible, the steam turbine's ultimate operational status is unknown. The following conclusions are based on the information identified in this report and are subject to change as KMW and its steam turbine supplier, Chola, make changes and more information becomes available.

*For the reasons explained below, the steam turbine supplied by KMW does not comply with the requirements of the KMW Contract. It does not comply with industry standards or the performance requirements identified in the KMW Contract. Its operation to date has been unreliable and neither KMW nor Chola have been able to fix this problem. Therefore, the steam turbine is not acceptable and should be replaced with a properly manufactured steam turbine that conforms to the requirements of the KMW Contract. (Emphasis added).*

26. Following completion of its evaluation, MD&A concluded among other things: that the Turbine castings were substandard in material properties and thickness and that as a result could lead to failure, serious injury and death; that the Turbine electrical output was deficient and limited to only 85% of output guaranteed by KMW; that the Turbine had a poor performance record with numerous parts requiring replacement within a short time after it began to operate; and that Turbine manufacturer, Chola, lacked the engineering expertise to correct the problems with the Turbine. See pages 28 through 30 of **Exhibit C** for further details.



27. In light of the MD&A Report, on May 3, 2019, GRE formally notified “*KMW that it [was] rejecting the Turbine as a non-conforming good and requiring it be replaced with a new steam turbine that conforms to the industry standards and the requirements of the [Contract].*”

A copy of GRE’s formal notice to KMW that the Turbine is non-conforming is attached hereto as **Exhibit D**.

28. As indicated in the Determination of Claim of the Project Engineer, Mid-South Engineering Company (“**Mid-South**”) attached hereto as **Exhibit E**, in early June 2019, GRE requested that Mid-South serve as engineer in a decision-making process related to GRE’s claim of non-conforming goods.

29. Following its review of the MD&A Report and responses thereto provided by KMW, Mid-South concluded on June 14, 2019, that the Turbine failed to conform to the requirements of the Contract.

#### **KWM’s Response to Turbine Problems**

30. On or about July 8, 2019, KMW promised in writing that it would replace the non-conforming Turbine with a conforming turbine. A copy the July 8, 2019, email from KMW’s duly authorized attorney is attached hereto as **Exhibit F**.

31. On or about July 14, 2019, after agreeing to replace the non-conforming Turbine, KMW provided GRE with a preliminary schedule for the replacement project. A copy of KMW’s preliminary schedule is attached hereto as **Exhibit G**.

32. KMW’s schedule identified the basic phases of the replacement effort, starting with steps needed to identify possible suppliers for the new turbine, contacting potential suppliers, arranging site visits, soliciting proposals and selecting a supplier, issuing a purchase order, manufacturing and installation time.

33. Based on that schedule, GRE expected that the new turbine would be commissioned and producing power and steam in accordance with the Contract no later than December 31, 2020.
34. KMW's schedule was predicated on placing an order for the replacement turbine by October 17, 2019.
35. GRE and KMW subsequently agreed to extend the deadline for ordering the new turbine to November 15, 2019.
36. By that time, GRE and KMW had narrowed the list of possible turbine suppliers to two manufacturers.
37. Following review of the two proposals, KMW agreed that it would purchase the replacement turbine from Fincantieri S.p.A. ("**Fincantieri**"), a manufacturer of steam turbines based in Italy.
38. On January 20, 2020, KMW issued its purchase order to Fincantieri in the amount of €1.895 million for a replacement for the rejected, non-conforming Chola Turbine ("**Purchase Order**"). A copy of the Purchase Order is attached hereto as **Exhibit H**.
39. The parties scheduled a kick-off meeting for February 25-26, 2020 among Fincantieri, KMW and GRE to finalize engineering details for the replacement turbine.
40. KMW failed to include in the Purchase Order certain critical equipment and services that KMW agreed to supply under the Contract including a spare rotor, various spare parts and engineering support.
41. These excluded items were supplied by KMW under the original Contract and are critical to the proper operation and maintenance of the new turbine.

42. Following late delivery of the Turbine by KMW, and as the failings of the Turbine became known, GRE provided written notification of its accruing damages and claims against KMW on multiple occasions.

43. Subsequent to issuing the Purchase Order to Fincantieri, KMW threatened to rescind the Purchase Order unless GRE agreed to a financial settlement of its accruing damages claims against KMW.

44. In other words, KMW sought to leverage GRE's need to have a functioning turbine in order to compel GRE to compromise its valid claims for damages arising from KMW's failure to deliver a functioning turbine in the first instance.

#### **Recent Status**

45. In response, GRE notified KMW and its Bond surety, Liberty Mutual, by letter dated February 4, 2020, that it was "*considering declaring [KMW] in default under the terms of the [Contract] ...*" Such notice was required under the Bond prior to termination of the Contract with KMW. A copy of GRE's notice to Liberty dated February 4, 2020, is attached hereto as **Exhibit I**.

46. As required by the Bond, Liberty, KMW and GRE participated in a conference (via telephone) on February 18, 2020, to discuss KMW's performance failures under the Contract and the reasons for GRE's notice of default.

47. As planned, representatives of Liberty Mutual, Fincantieri and KMW met with GRE at its Searsmont, Maine, facility during the week of February 25 and 26, 2020, to finalize engineering details for the replacement turbine. Fincantieri also expected to finalize the commercial terms for payment of the replacement turbine by KMW.

48. At these meetings, Fincantieri provided notice at that time that it would not continue efforts to engineer and manufacture the replacement turbine unless KMW finalized payment terms. A copy of minutes of these meetings prepared by Fincantieri are attached hereto as **Exhibit J**.

49. Due to KMW's failure to finalize the payment terms for the replacement turbine, its failure to commit to purchasing critical spare parts and engineering support, and KMW's threats to either suspend work on the replacement turbine or cancel the order, GRE concluded that KMW was unwilling or financially unable to accomplish the replacement as required by the Contract.

50. GRE, through its counsel, again notified Liberty of its intention to terminate the Contract with KMW for default on April 8, 2020. A copy of GRE's counsel's notice to Liberty dated April 8, 2020, is attached hereto as **Exhibit K**.

51. KMW's recent insolvency filing, which cites KMW's obligations to GRE as a primary reason for the filing, demonstrates that GRE was correct in its assessment about KMW's inability to fulfill its obligations under the Contract.

52. Since GRE notified Liberty Mutual that it was considering declaring KMW in default, KMW has failed to take material steps to meet its obligations to provide a conforming steam turbine, specifically including issuing a purchase order for the spare rotor, spare parts and engineering support, and negotiating final terms and conditions with Fincantieri.

#### **Significant and Ongoing Harm being Suffered by GRE**

53. As a result of KMW's failure to supply a conforming turbine, GRE has incurred and continues to incur substantial financial impacts. GRE estimates that its damages through the end

of January 2021 (the date when the new turbine was projected to be on line), will exceed \$8.75 million.

54. GRE's damages include \$1.67 million spent out of pocket for engineering, testing, equipment repairs and professional services in order to address the failings of the Chola Turbine. GRE expects to incur another \$250,000 in out-of-pocket costs through the end of January 2021. This figure may increase significantly given KMW's failure to pay certain subcontractors, consultants and suppliers for work performed during GRE's recent maintenance and repair shutdown.

55. In addition to its out-of-pocket costs, GRE has experienced operational losses due to the Turbine's failure to generate electricity at the level required by the Contract. This has prevented GRE from selling electricity in accordance with its Power Purchase Agreement and forced GRE to run a second boiler to meet the needs of Robbins' lumber mill operations.

56. These operational losses through the end of December 2020 are expected to exceed \$3.5 million.

57. In addition, during the estimated six-month period following delivery of the replacement turbine when the non-conforming Turbine is removed and replaced, GRE expects to experience losses in excess of \$2.9 million.

58. The damages described above assumed that the new turbine would be delivered in January 2021. Obviously, in light of KMW's financial distress and failure to honour its obligations under the Contract, this time line is not possible.

59. GRE's damages mount each day that the non-conforming Chola Turbine remains in operation. Attached hereto as **Exhibit L** is GRE's March 2, 2020, demand to KMW outlining its damages claims.

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60. The relief sought by KMW in its insolvency proceedings before the Ontario Superior Court of Justice, including the proposed stalking horse purchase agreement makes no provision for KMW's obligation under the Contract.

61. GRE has been informed by KMW's surety, Liberty, that Liberty will undertake no obligation with regard to its obligations under the Bond, until GRE issues a notice of termination of the Contract.

62. GRE cannot continue to sustain the ongoing losses stemming from KMW's delivery of the non-conforming Turbine and KMW's inexcusable delays in supplying a conforming turbine.

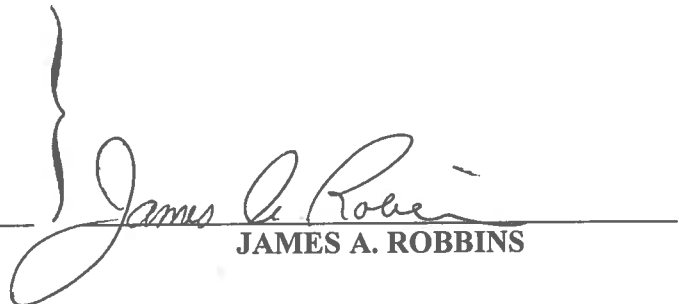
63. It is critical to GRE and Robbins Lumber's continued existence that Liberty undertake to fulfill its obligations under the Bond by completing the order for the replacement turbine and other steps necessary to complete KMW's obligations under the Contract.

SWORN BEFORE ME at the Town of  
Searsmont, in the State of Maine on May 1,  
2020



Notary Public  
Commission expires:

DOUGLAS C. FORTIN NOTARY PUBLIC STATE OF MAINE MY COMMISSION EXPIRES 10-24-24
--



JAMES A. ROBBINS

**TAB A**

This is **Exhibit "A"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020

.....*Douglas C. Fortin*.....

Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24



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This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

**AGREEMENT BETWEEN  
BUYER AND SELLER  
FOR PROCUREMENT CONTRACTS**

Prepared by



and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

AMERICAN SOCIETY OF CIVIL ENGINEERS

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
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Page 1

This Agreement Between Buyer and Seller for Procurement Contracts has been prepared for use with the Standard General Conditions for Procurement Contracts (EJCDC P-700, 2010 Edition). Their provisions are interrelated, and a change in one may necessitate a change in the others. The suggested wording contained in the Suggested Instructions to Bidders for Procurement Contracts (EJCDC P-200, 2010 Edition), the Suggested Bid Form for Procurement Contracts (EJCDC P-400, 2010 Edition), and the Guide to the Preparation of Supplementary Conditions for Procurement Contracts (EJCDC P-800, 2010 Edition) is also carefully interrelated with the wording of this Agreement.

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This document contains a suggested format and suggested terms and conditions that will be applicable in most situations. Additional information concerning the use of *this and other* EJCDC Procurement Documents may be found in the Commentary on the EJCDC Procurement Documents (EJCDC P-001, 2010 Edition).

For brevity in the text, the Standard General Conditions for Procurement Contracts (EJCDC P-700, 2010 Edition) will be referred to as "General Conditions."

For brevity in the "Notes to Users" referenced paragraphs of the Suggested Instruction to Bidders (EJCDC P-200, 2010 Edition) are referred to with the prefix "I", those of the Bid Form (EJCDC P-400, 2010 Edition) with the prefix "BF", and those of the General Conditions (P-700, 2010 Edition) or Supplementary Conditions (EJCDC P-800, 2010 Edition) with the prefix "GC" or "SC".

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---

## AGREEMENT

THIS AGREEMENT is by and between Georges River Energy, LLC ("Buyer") and KMW Energy Inc. ("Seller").

Buyer and Seller hereby agree as follows:

### ARTICLE 1 – GOODS AND SPECIAL SERVICES

- 1.01 Seller shall furnish the Goods and Special Services as specified or indicated in the Contract Documents.

### ARTICLE 2 – THE PROJECT

- 2.01 The Project, of which the Goods and Special Services may be the whole or only a part, is identified as follows:

### ARTICLE 3 – ENGINEER

- 3.01 The Contract Documents for the Goods and Special Services have been prepared by Mid-South Engineering, Inc. ("Engineer"), which is to act as Buyer's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with Seller's furnishing of Goods and Special Services.

### ARTICLE 4 – POINT OF DESTINATION

- 4.01 The Point of Destination is designated as: Georges River Energy, LLC @ Robbins Lumber Company, 53 Ghent Road, Searsmont, ME 04973.

### ARTICLE 5 – CONTRACT TIMES

- 5.01 *Time of the Essence*

- A. All time limits for Milestones, if any, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the Contract Documents, are of the essence of the Contract.

- 5.02 *Milestones*

- A. *Date for Submittal of Shop Drawings and Samples:* Seller shall submit all Shop Drawings and Samples required by the Contract Documents to Buyer for Engineer's review and approval on or before March 1, 2017. It is the intent of the parties that (1) Engineer conduct such review and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within ten (10) days of Seller's submittal of such Shop Drawings and Samples; and (2) resubmittals be limited whenever possible. If more than one resubmittal is necessary for reasons not the fault and beyond the control of Seller, then Seller shall be entitled to seek appropriate relief under Paragraph 7.02.B of the General Conditions.

- B. *Date for Delivery of Goods:* The Goods are to be delivered FOB to the Point of Destination and ready for Buyer's receipt of delivery on or before the dates shown on Exhibit A-- Progress Schedule
- C. *Days for Furnishing Special Services:* The furnishing of Special Services, including commissioning assistance and erection assistance services, to Buyer will commence and be completed in mid-2018. Buyer and Seller will agree to exact dates six months prior to the services being needed.

5.03 *Buyer's Final Inspection*

- A. *Days to Achieve Final Inspection:* Buyer shall make its final inspection of the Goods pursuant to Paragraph 8.01.C of the General Conditions within two months of start of commercial operations or when Seller demonstrates that its systems are ready for performance tests, whichever is later.

5.04 *Liquidated Damages*

- A. In the event of late deliveries of the specified Goods, Seller shall pay liquidated damages as set forth in Paragraph 7.02.H of the General Conditions.
- B. In the event of early deliveries of the specified Goods, Seller shall be entitled to receive incentive payments in accordance with Paragraph 7.02.I of the General Conditions.

#### ARTICLE 6 – CONTRACT PRICE

- 6.01 Buyer shall pay Seller for furnishing the Goods and Special Services in accordance with the Contract Documents as follows:

- A. A Lump Sum of \$ 12,825,000.00 US.

#### ARTICLE 7 – PAYMENT PROCEDURES

7.01 *Submittal and Processing of Payment*

- A. Seller shall submit Applications for Payment in accordance with Article 10 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

7.02 *Progress Payments; Retainage*

- A. Buyer shall make progress payments on account of the Contract Price on the basis of Seller's Applications for Payment as follows:
1. Upon receipt of Applications for Payment submitted in accordance with Paragraph 10.01.A.1 of the General Conditions and accompanied by Engineer's recommendation of payment in accordance with Paragraph 10.02.A of the General Conditions, amount equal to values shown on Exhibit B Payment Schedule.

7.03 *Final Payment*

- A. Upon receipt of the final Application for Payment accompanied by Engineer's recommendation of payment, Buyer shall pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation and Owners' claims, including but not limited to liquidated damages. Under no circumstance will final payment be made prior to successful performance tests. Performance tests shall be run within two months of start of commercial operations or when Seller demonstrates that its systems are ready for performance tests, whichever is later.

**ARTICLE 8 – INTEREST**

- 8.01 All monies not paid when due as provided in Article 10 of the General Conditions shall bear interest at the annual rate of five percent (5%).

**ARTICLE 9 – SELLER'S REPRESENTATIONS**

- 9.01 In order to induce Buyer to enter into this Agreement, Seller makes the following representations:
- A. Seller is highly qualified and experienced in providing similar goods to the Goods and has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents, as applicable to Seller's obligations identified in Article 1 above.
- B. If required by the Bidding Documents to visit the Point of Destination and site where the Goods are to be installed or Special Services will be provided, or if, in Seller's judgment, any local condition may affect cost, progress, or the furnishing of the Goods and Special Services, Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, and the furnishing of the Goods and Special Services.
- C. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and the furnishing of the Goods and Special Services.
- D. Seller has carefully studied, considered, and correlated the information known to Seller; information commonly known to sellers of similar goods doing business in the locality of the Point of Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Seller's visits, if any, to the Point of Destination and site where the Goods are to be installed or Services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of Seller's obligations under the Contract Documents.

PL



- E. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.
- F. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing Goods and Special Services.

#### ARTICLE 10 – CONTRACT DOCUMENTS

##### 10.01 *Contents*

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 1 to 7, inclusive);
  - 2. Performance Bond on the form attached as Exhibit C
  - 3. Payment Bond on the form attached as Exhibit D
  - 4. General Conditions (pages 1 to 35, inclusive);
  - 5. Supplementary Conditions (pages 1 to 4 inclusive);
  - 6. Exhibit A – Progress Schedule *dated 12-5-2016*;  
Exhibit B – Payment Schedule *dated 11-22-2016, Rev. 2*;
  - 8. Seller's Bid, solely as to the definitions of equipment and services to be provided, performance criteria, and prices set forth therein *dated 12-6-2016, Rev. 9*;
  - 7. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    - a. Notice to Proceed;
    - b. Change Order(s);
    - c. Work Change Directive(s).
- B. The documents listed in Paragraph 10.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 10.
- D. The Contract Documents may only be amended, or supplemented as provided in Paragraph 3.04 of the General Conditions.

**ARTICLE 11 – MISCELLANEOUS**11.01 *Terms*

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions and the Supplementary Conditions.

11.02 *Assignment of Contract*

- A. Intentionally omitted.
- B. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound. Specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by Laws and Regulations). Unless specifically stated to the contrary in any written consent to such an assignment, such an assignment will not release or discharge the assignor from any duty or responsibility under the Contract Documents.

11.03 *Successors and Assigns*

- A. Buyer and Seller each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

11.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Buyer and Seller. The Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

11.05 *Seller's Certifications*

- A. Seller certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 11.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Buyer, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

BK

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

11.06 *Limitations*

Intentionally omitted.

11.07 *Other Provisions*

- A. This Agreement may be executed in one or more counterparts, and when so executed each counterpart shall be deemed to be an original, and said counterparts together shall constitute one and the same instrument. Delivery of an executed counterpart of this Agreement by facsimile, electronic mail, or any other reliable means shall be deemed to be as effective for all purposes as delivery of the manually executed counterpart.
- B. Notwithstanding anything to the contrary in this Agreement, Buyer and Seller acknowledge that on October 14, 2016 (PO No. GRE-10000) Buyer authorized Seller to commence the design of the Goods and that Seller has commenced design of the Goods prior to the execution of this Agreement with the express understanding all such design work shall be governed by the terms of this Agreement as if this Agreement had been executed prior to the authorization and commencement of the design work and that the cost of all design work included in the Contract Price.
- C. To the extent the any provision in the Seller's Bid is inconsistent with any provision in this Agreement or the General Conditions, the provisions in this Agreement or the General Conditions shall take precedence.

[Signatures on following page]

*SK*

IN WITNESS WHEREOF, Buyer and Seller have signed this Agreement. Counterparts have been delivered to Buyer and Seller. All portions of the Contract Documents have been signed or identified by Buyer and Seller or on their behalf.

This Agreement will be effective on December \_\_, 2016 (which is the Effective Date of the Agreement).

Buyer: Georges River Energy, LLC

Seller: KMW Energy Inc.

By: \_\_\_\_\_  
Alden Robbins, President

By: Eric B. Rosen  
Eric B. Rosen, CEO

Attest: \_\_\_\_\_

Attest: Justin

Address for giving notice:

Address for giving notice:

Georges River Energy, LLC  
Attn: Alden Robbins  
P.O. Box 9  
53 Ghent Road  
Searsmont, ME 04973  
United States

KMW Energy Inc.  
Attn: Eric B. Rosen, M.Sc., P. Eng.  
635 Wilton Grove Road  
London, Ontario N6N 1N7  
Canada

Designated Representative:

Designated Representative:

Name: Alden Robbins  
Title: President  
Phone: 207 342 5221 Direct: 207 342 6321  
Email: ARobbins@rlco.com  
Facsimile: 207 342 5201

Name: Eric B. Rosen, M.Sc., P. Eng.  
Title: CEO  
Phone: 519 686 1771  
Email: ebrosen@kmwenergy.com  
Facsimile: 519 686 1132

*ER*

IN WITNESS WHEREOF, Buyer and Seller have signed this Agreement. Counterparts have been delivered to Buyer and Seller. All portions of the Contract Documents have been signed or identified by Buyer and Seller or on their behalf.

This Agreement will be effective on December 6, 2016 (which is the Effective Date of the Agreement).

Buyer: Georges River Energy, LLC

Seller: KMW Energy Inc.

By: *Alden Robbins*  
Alden Robbins, President

By: \_\_\_\_\_  
Eric B. Rosen, CEO

Attest: *James A. Robbins*

Attest: \_\_\_\_\_

Address for giving notice:

Address for giving notice:

Georges River Energy, LLC  
Attn: Alden Robbins  
P.O. Box 9  
53 Ghent Road  
Searsmont, ME 04973  
United States

KMW Energy Inc.  
Attn: Eric B. Rosen, M.Sc., P. Eng.  
635 Wilton Grove Road  
London, Ontario N6N 1N7  
Canada

Designated Representative:

Designated Representative:

Name: Alden Robbins  
Title: President  
Phone: 207 342 5221 Direct: 207 342 6321  
Email: ARobbins@rleo.com  
Facsimile: 207 342 5201

Name: Eric B. Rosen, M.Sc., P. Eng.  
Title: CEO  
Phone: 519 686 1771  
Email: ebrosen@kmwenergy.com  
Facsimile: \_\_\_\_\_



## PAYMENT SCHEDULE

## EXHIBIT B

Rev 11-22-2016 Rev 2

Payment	Milestone	Terms	Target Dates	Review
1	Purchase Order - FNTF	10%	12/20/2016	
2	Boiler Ordered	5%	KMW places order for equipment and the verification will be an unpriced copy of KMW purchase order(s)	Expedited
3	ESP Ordered	3%	KMW places order for equipment and the verification will be an unpriced copy of KMW purchase order(s)	Expedited
4	Combustion Chamber Grates Ordered	1%	KMW places order for equipment and the verification will be an unpriced copy of KMW purchase order(s)	Expedited
5	Turbine/Generator Ordered	4%	KMW places order for equipment and the verification will be an unpriced copy of KMW purchase order(s)	Expedited
6	Cooling Tower Ordered	2%	KMW places order for equipment and the verification will be an unpriced copy of KMW purchase order(s)	Expedited
7	Boiler Drums and Boiler Tubes Received in Shop	8%	Essential parts received in shop. Verifications are pictures and statements to this effect.	Engineering Review
8	Combustion Chamber Grates Received at Fabrication Shop	4%	Essential parts received in shop. Verifications are pictures and statements to this effect.	Engineering Review
9	Combustion Chamber Delivered to jobsite	10%	7/3/2017	Engineering Review
10	Boiler Delivered to jobsite	10%	10/23/2017	Engineering Review
11	Turbine & Generator Shipped	5%	Shipping documents and statements to this effect.	Engineering Review
12	Turbine & Generator Delivered to jobsite	11%	12/19/2017	Engineering Review
13	Cooling Tower Delivered to jobsite	3%	5/9/2017	Engineering Review
14	ESP Delivered to jobsite	4%	7/8/2017	Engineering Review
15	Starting Up or, in the event that Starting Up is delayed due to circumstances beyond KMW's control, 130 days after last delivery to site, whichever comes first	5%	7/17/2018	Engineering Review
16	Commissioning of the KMW Boiler Equipment or, in the event that commissioning of the KMW equipment is delayed due to circumstances beyond KMW's control, 160 days after last delivery to site, whichever comes first.	5%	8/1/2018	Engineering Review
17	Commissioning of the Turbine/Generator or, in the event that commissioning of the turbine/generator is delayed due to circumstances beyond KMW's control, 160 days after last delivery to site, whichever comes first	5%	8/1/2018	Engineering Review
18	Performance Testing or, in the event that final testing is delayed due to circumstances beyond KMW's control, 200 days after last delivery to site, whichever comes first	5%	10/1/2018	Engineering Review





This document has important legal consequences: consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

**STANDARD GENERAL CONDITIONS  
FOR PROCUREMENT CONTRACTS**

Prepared by



and

Issued and Published Jointly by



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**STANDARD GENERAL CONDITIONS  
FOR PROCUREMENT CONTRACTS**

**ARTICLE 1 – DEFINITIONS AND TERMINOLOGY**

1.01 *Defined Terms*

- A. Whenever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument signed by both Buyer and Seller covering the Goods and Special Services and which lists the Contract Documents in existence on the Effective Date of the Agreement.
  3. *Application for Payment*—The form acceptable to Buyer which is used by Seller in requesting progress and final payments and which is accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*— The offer or proposal of a Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.
  5. *Bidder*—The individual or entity that submits a Bid directly to Buyer.
  6. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
  7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.
  8. *Buyer*—The individual or entity purchasing the Goods and Special Services.
  9. *Change Order*—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Contract Documents or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.

10. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
11. *Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
12. *Contract Documents*—Those items so designated in the Agreement, including the Progress Schedule. Shop Drawings and other Seller submittals are not Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.
13. *Contract Price*—The moneys payable by Buyer to Seller for furnishing the Goods and Special Services in accordance with the Contract Documents as stated in the Agreement.
14. *Contract Times*—The times stated in the Agreement by which the Goods must be delivered and Special Services must be furnished.
15. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Drawings as so defined.
16. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
17. *Engineer*—The individual or entity designated as such in the Agreement.
18. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services but which does not involve a change in the Contract Price or Contract Times.
19. *General Requirements*—Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.
20. *Goods*—The tangible and movable personal property that is described in the Contract Documents, regardless of whether the property is to be later attached to realty.
21. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.

22. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
23. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to the Contract Times.
24. *Notice of Award*—The written notice by Buyer to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Buyer will sign and deliver the Agreement.
25. *Notice to Proceed*—A written notice given by Buyer to Seller fixing the date on which the Contract Times commence to run and on which Seller shall start to perform under the Contract.
26. *Point of Destination*—The specific address of the location where delivery of the Goods shall be made, as stated in the Agreement.
27. *Project*—The total undertaking of which the Goods and Special Services may be the whole, or only a part.
28. *Project Manual*—The documentary information prepared for bidding and furnishing the Goods and Special Services. A listing of the contents of the Project Manual is contained in its table of contents.
29. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.
30. *Seller*—The individual or entity furnishing the Goods and Special Services.
31. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services.
32. *Special Services*—Services associated with the Goods to be furnished by Seller as required by the Contract Documents.
33. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.
34. *Successful Bidder*—The Bidder submitting a responsive Bid, to whom Buyer makes an award.

35. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
36. *Work Change Directive*—A written statement to Seller issued on or after the Effective Date of the Agreement and signed by Buyer ordering an addition, deletion, or other revision in the Contract Documents with respect to the Goods and Special Services. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.
37. *Progress Schedule*—The schedule of activities that provides an orderly progression of the submittals, tests, and deliveries to completion within the specified Milestones and the Contract Times.

#### 1.02 Terminology

A. The words and terms discussed in Paragraphs 1.02.B and 1.02.C are not defined, but have the indicated meanings when used in the Bidding Requirements or Contract Documents.

#### B. Intent of Certain Terms or Adjectives:

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Contract Documents.
2. The word “non-conforming” when modifying the words “Goods and Special Services,” “Goods,” or “Special Services,” refers to Goods and Special Services that fail to conform to the Contract Documents.
3. The word “receipt” when referring to the Goods, shall mean the physical taking and possession by the Buyer under the conditions specified in Paragraph 8.01.B.3.
4. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

5. The word "furnish," when used in connection with the Goods and Special Services shall mean to supply and deliver said Goods to the Point of Destination (or some other specified location) and to perform said Special Services fully, all in accordance with the Contract Documents.
- C. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 – PRELIMINARY MATTERS

### 2.01 *Delivery of Bonds*

- A. Upon full Notice to Proceed, Seller shall deliver such bonds as Seller may be required to furnish.

### 2.02 *Evidence of Insurance*

- A. When Seller delivers the executed counterparts of the Agreement to Buyer, Seller shall deliver to Buyer, with copies to each additional insured identified by name in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Seller is required to purchase and maintain in accordance with Article 4.

### 2.03 *Copies of Documents*

- A. Buyer shall furnish Seller up to five printed or hard copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

### 2.04 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence as provided on the Progress Schedule.

### 2.05 *Designated Representatives*

- A. Buyer and Seller shall each designate its representative at the time the Agreement is signed. Each representative shall have full authority to act on behalf of and make binding decisions in any matter arising out of or relating to the Contract.

### 2.06 *Progress Schedule*

- A. The Progress Schedule of activities, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries included in the Contract Documents.
- B. The Progress Schedule shall provide an orderly progression of the submittals, tests, and deliveries to completion within the specified Milestones and the Contract Times. The Progress Schedule will not impose on Buyer or Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the work nor interfere with or relieve

Seller from Seller's full responsibility therefor. The Buyer and Engineer shall not be deemed to have acknowledged the reasonableness and attainability of the schedule.

2.07 *Preliminary Conference*

A. Intentionally deleted.

2.08 *Safety*

A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.

**ARTICLE 3 – CONTRACT DOCUMENTS: INTENT AND AMENDING**

3.01 *Intent*

- A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.
- C. Clarifications and interpretations of, or notifications of minor variations and deviations in, the Contract Documents, will be issued by Engineer as provided in Article 9.

3.02 *Standards, Specifications, Codes, Laws and Regulations*

- A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
- B. No provision of any such standard, specification, manual or code, or any instruction of a supplier shall be effective to change the duties or responsibilities of Buyer or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to Buyer or Engineer, or any of their consultants, agents, or employees any duty or authority to supervise or direct the performance of Seller's obligations or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.






### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies:*

1. *Seller's Review of Contract Documents Before the Performance of the Contract:* Before performance of the Contract, Seller shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Seller shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Seller discovers or has actual knowledge of and shall obtain a written interpretation or clarification from Engineer before proceeding with the furnishing of any Goods and Special Services affected thereby.
2. *Seller's Review of Contract Documents During the Performance of the Contract:* If, during the performance of the Contract, Seller discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Contract, any standard, specification, manual or code, or of any instruction of any Supplier, Seller shall promptly report it to Engineer in writing. Seller shall not proceed with the furnishing of the Goods and Special Services affected thereby until an amendment to or clarification of the Contract Documents has been issued.
3. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Seller had actual knowledge thereof or, with the exercise of reasonable care, should have discovered the conflict, error, ambiguity, or discrepancy.



#### B. *Resolving Discrepancies:* Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Amending and Clarifying Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions to the Goods and Special Services or to modify contractual terms and conditions by a Change Order.
- B. Buyer may issue a Work Change Directive providing for additions, deletions, or revisions to the Goods and Special Services, in which case (1) the Contract Price shall be equitably adjusted to account for any reasonable and necessary credits to Buyer for any such deletion, or for costs (including reasonable overhead and profit) incurred by Seller to accommodate

such an addition or revision and (2) the Contract Times shall be equitably adjusted to account for any impact on progress and completion of performance. Such adjustments subsequently shall be duly set forth in a Change Order.

- C. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Goods and Special Services may be authorized, by one or more of the following ways:
1. A Field Order;
  2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 5.06.D.3); or
  3. Engineer's written interpretation or clarification.


#### ARTICLE 4 – BONDS AND INSURANCE

##### 4.01 *Bonds*

- A. Seller shall furnish to Buyer performance and payment bonds, each in an amount at least equal to fifty percent (50%) of the Contract Price, as security for the faithful performance and payment of all of Seller's obligations under the Contract Documents. This bond shall remain in effect until (1) one year after the date when final payment becomes due, or (2) completion of the correction period specified in Paragraph 8.03, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Seller is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 4.01.B, Seller shall promptly notify Buyer and Engineer and shall, within twenty (20) days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 4.01.B and 4.02.

##### 4.02 *Insurance*


- A. Seller shall provide insurance of the types and coverages and in the amounts stipulated on the Schedule of Insurance contained in the Supplementary Conditions.

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- B. Failure of Buyer to demand certificates of insurance or other evidence of Seller's full compliance with these insurance requirements or failure of Buyer to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Seller's obligation to maintain such insurance.
  - C. Upon assignment of this Contract, Seller shall comply with the written request of assignee to provide certificates of insurance to assignee.
  - D. Buyer does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Seller.
  - E. The insurance and insurance limits required herein shall not be deemed as a limitation on Seller's liability under the indemnities granted to Buyer in the Contract Documents.

#### 4.03 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Buyer or Seller shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

### ARTICLE 5 – SELLER'S RESPONSIBILITIES



#### 5.01 *Supervision and Superintendence*

- A. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Contract Documents. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Contract Documents. Notwithstanding the foregoing, Buyer acknowledges that Seller is not responsible for installation of the Goods as part of the Project, and that Buyer is otherwise procuring such services. Seller shall not be responsible for the negligence of Buyer or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure that is shown or indicated in and expressly required by the Contract Documents.

#### 5.02 *Labor, Materials and Equipment*

- A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Contract.
- B. All Goods, and all equipment and material incorporated into the Goods, shall be as specified, and unless specified otherwise in the Contract Documents, shall be:
  - 1. new, and of good quality;

2. protected, assembled, connected, cleaned, and conditioned in accordance with the original manufacturer's instructions; and
3. shop assembled to the greatest extent practicable.

### 5.03 *Laws and Regulations*

- A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller's compliance with any Laws or Regulations.
- B. If Seller furnishes Goods and Special Services knowing that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It shall not be Seller's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this provision shall not relieve Seller of Seller's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance shall be the subject of an adjustment in Contract Price or Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 9.06.

### 5.04 *Or Equals*

- A. Whenever the Goods, or an item of material or equipment to be incorporated into the Goods, are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier or manufacturer, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item is permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.
  1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or-equal" item.
  2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if:
    - a. in the exercise of reasonable judgment, Engineer determines that: (1) it is at least equal in quality, durability, appearance, strength, and design characteristics; (2) it will reliably perform at least equally well the function imposed by the design concept of

the completed Project as a functioning whole; (3) it has an acceptable record of performance and availability of responsive service; and

- b. Seller certifies that if approved: (1) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and (2) the proposed item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraph 5.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or submittal. No "or-equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Contract Documents.
- C. *Special Guarantee:* Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."
- D. *Data:* Seller shall provide all data in support of any such proposed "or-equal" at Seller's expense.

#### 5.05 Taxes

- A. Seller shall be responsible for all taxes and duties arising out of the sale of the Goods and the furnishing of Special Services except as provided in the Contract Documents. All taxes are included in the Contract Price, except as noted in the Supplementary Conditions, and US taxes due and payable.

#### 5.06 Shop Drawings and Samples

- A. Seller shall submit Shop Drawings and Samples to Buyer for Engineer's review and approval in accordance with the schedule required in Paragraph 2.06.A. All submittals will be identified as required and furnished in the number of copies specified in the Contract Documents. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide.
- B. Where a Shop Drawing or Sample is required by the Contract Documents, any related work performed prior to Engineer's approval of the pertinent submittal will be at the sole expense and responsibility of Seller.
- C. *Submittal Procedures:*
1. Before submitting each Shop Drawing or Sample, Seller shall have determined and verified:

- a. all field measurements (if required), quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto; and
  - b. that all materials are suitable with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the furnishing of Goods and Special Services.
2. Seller shall also have reviewed and coordinated each Shop Drawing or Sample with the Contract Documents.
  3. Each submittal shall bear a stamp or include a written certification from Seller that Seller has reviewed the subject submittal and confirmed that it is in compliance with the requirements of the Contract Documents. Both Buyer and Engineer shall be entitled to rely on such certification from Seller.
  4. With each submittal, Seller shall give Buyer and Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both in a written communication separate from the submittal and by specific notation on each Shop Drawing or Sample.

*D. Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples.
2. Engineer's review and approval will be only to determine if the Goods and Special Services covered by the submittals will, after installation or incorporation in the Project, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole.
3. Engineer's review and approval shall not relieve Seller from responsibility for any variation from the requirements of the Contract Documents unless Seller has complied with the requirements of Paragraph 5.06.C.4 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Seller from responsibility for complying with the requirements of Paragraph 5.06.C.1.

*E. Resubmittal Procedures:*

1. Seller shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. Seller shall direct specific attention in writing to any revisions other than the corrections called for by Engineer on previous submittals.
- F. Seller shall furnish required submittals with sufficient information and accuracy in order to obtain required approval of an item with no more than three (3) submittals. Engineer will record Engineer's time for reviewing subsequent submittals of Shop Drawings, samples, or

other items requiring approval and Seller shall reimburse Buyer for Engineer's charges for such time.

- G. In the event that Seller requests a change of a previously approved item, Seller shall reimburse Buyer for Engineer's charges for its review time unless the need for such change is beyond the control of Seller.

5.07 *Continuing Performance*

- A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.06.A., and the Goods shall be delivered and the Special Services furnished within the Contract Times specified in the Agreement. Seller and Buyer acknowledge that the consequences of delayed performance shall be as set out in Article 7 below.
- B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraphs 11.03 or 11.04, or as Buyer and Seller may otherwise agree in writing.

5.08 *Seller's Warranties and Guarantees*

- A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed shall be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.
- B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller's warranty and guarantee. If the Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods shall comply with the requirements of Paragraph 5.02.B.
- C. The Seller acknowledges that it is responsible for the design of the Goods, has carefully reviewed the design and performance criteria provided by the Buyer, and that it shall be responsible for any nonconformity in the Goods or their design, unless such nonconformity results solely from change in the design or performance criteria established by the Buyer.
- D. Seller's warranties and guarantees hereunder excludes defects or damage or expenses caused by:
1. abuse, improper modification, improper maintenance, improper storage or handling or improper operation by persons other than Seller; or
  2. deterioration and wear occasioned by chemical and abrasive action, corrosion or chemical attack, or excessive heat;

3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance, or otherwise caused by the Buyer's failure to install, maintain and operate the Goods in accordance with the requirements of the Contract Documents, Seller's written instructions and drawings and good industry practice;
  4. use under operating conditions outside the parameters for which the Goods were designed and of which the Seller was not immediately advised in writing;
  5. installation or maintenance by the Buyer's contractors, own forces or agents;
  6. defective parts not supplied by the Seller, and the costs of labor to remove and reinstall defective parts;
  7. freight costs associated with returning Goods to the Seller, provided that Seller is given notice of the asserted deficiency and agrees that the Good(s) needs to be returned consistent with the process outlined in Section 5.08(F);
  8. normal wear and tear under normal usage.
- E. Seller's obligation to furnish the Goods and Special Services in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Contract Documents:
1. observations by Buyer or Engineer;
  2. recommendation by Engineer or payment by Buyer of any progress or final payment;
  3. use of the Goods by Buyer;
  4. any acceptance by Buyer (subject to the provisions of Paragraph 8.02.D.1) or any failure to do so;
  5. the issuance of a notice of acceptance by Buyer pursuant to the provisions of Article 8;
  6. any inspection, test or approval by others; or
  7. any correction of non-conforming Goods and Special Services by Buyer.
- F. Buyer shall promptly notify Seller in writing of any defective part of the Goods, or any failure of the Goods to meet the performance and design criteria set out in the Contract Documents, which it identifies during any applicable warranty period, and upon any such notice (subject to the limitations set out herein). Seller shall repair or replace (FOB destination ), any defective part of the Goods which it has manufactured. The Buyer shall not authorize or permit any corrective work to be performed to address any defective Goods unless Seller has first had the opportunity to review and assess the matter and has been given sufficient reasonable opportunity to correct the defect or deficiency and has specifically approved the method and costs of the Buyer's contractor, own forces or agents to correct the defect or deficiency in writing, it being the intent of the parties that all such work be



performed by the Seller's employees or contractors except in extraordinary circumstances. If, after receiving notice of a defect or failure to perform by the Buyer, the Seller determines, after reasonable investigation, that no such defect or failure exists, the Buyer shall be responsible for all costs and expenses of Seller investigating the alleged defect or failure. Seller shall not warranty any corrective work performed by any other party, unless such work has been specifically approved by Seller and has been properly performed.

- G. Seller warrants the equipment, materials and workmanship comprising the Goods for a period of one year commencing on the earlier of the date on which the Project successfully passes its performance tests or December 31, 2018, provided however that nothing in the foregoing shall be construed to limit any longer warranty period under any warranty provided by the Seller's vendors or subcontractors, provided such warranties have been properly assigned to Buyer no later than the expiration of the Seller's warranty period.
- H. The warranties provided in this Paragraph 5.08 are the only warranties for any defect or deficiency in the Goods or Project or any failure of the Goods to perform in accordance with the requirements of the Contract Documents.

#### 5.09 *Indemnities, Limits on Liability and Mechanic's Liens*

- A. To the fullest extent permitted by Laws and Regulations, Seller shall defend, indemnify and hold harmless the Buyer and Engineer, including their affiliates and successors, and the officers, directors, members, shareholders, partners, employees, agents, consultants, contractors, and subcontractors of each and any of them from and against all claims, causes of action, lawsuits or regulatory proceedings, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other related dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Contract Documents, from any such claim, cost, loss, or damages attributable to bodily injury, sickness (including emotional distress), disease, or death to any person, or property damage, including the loss of use resulting therefrom, but only to the extent caused in whole or in part by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable. Seller further agrees in connection with its obligations under this Paragraph 5.09 to waive any and all subrogation rights it or its insurers may possess against any person indemnified hereunder.
- B. Recognizing that the Seller is responsible for the design of the Goods, the indemnification obligations of Seller under Paragraph 5.09.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, and consultants arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

- C. Notwithstanding any other provision of the Contract Documents, the total aggregate liability of the Seller arising out of this Contract or any legal relationship derived by it shall be limited to the amount of the Contract Price except to the extent covered by insurance.
- D. The Seller shall indemnify and hold harmless all of the Indemnitees from and against any costs and expenses (including reasonable attorney's fees) incurred by any of the Indemnitees in enforcing any of the Seller's defense, indemnity and hold-harmless obligations under this Contract.
- E. The Buyer shall indemnify and save harmless the Seller, its employees and agents from all claims, losses, penalties and damages, including legal costs and expenses, arising from (a) breach of any laws during installation, commissioning, testing or use of the Project, and (b) any loss or damage to the property of the Seller or third parties or injury to any persons, including but not limited to Seller's employees, contractors or agents, arising directly or indirectly from installation, commissioning, testing or use of the Project except any loss or damage arising solely from the negligence of the Seller or its employees.
- F. Seller shall not permit any mechanic's lien to be recorded in connection with this Project as a result of the failure to pay amounts due to its subcontractors and/or suppliers of any tier. If any mechanic's lien is recorded and if the Seller does not cause such lien to be released or discharged (by payment, bonding, or otherwise, and as promptly as possible), the Buyer shall have the right (but not the obligation) to pay all sums necessary to obtain such release or discharge and credit all amounts so paid against the Contract Sum. The Buyer, at the Buyer's discretion, may defend its title against such claims of mechanic's lien, and the Seller shall indemnify and hold harmless the Buyer from all reasonable costs and expenses, including reasonable attorney's fees arising out of such liens.
- G. The Seller's indemnity obligations under this Paragraph 5.09 shall also specifically include, without limitation, all fines, penalties, damages, liability, costs, expenses (including without limitation, reasonable attorney's fees) and punitive damages (if any) arising out of, or in connection with, any (1) violation of or failure to comply with any law, statute, ordinance, rule, regulation, code or requirement of a public authority by any employee or subcontractor of the Seller or any person or entity for whom either is responsible; (2) means, methods, procedures, techniques, or sequences of execution or performance of the Seller's Obligations under the Contract; (3) failure to secure and pay for permits, fees, licenses, and inspections as required under the Contract, or (4) any failure of the Goods to comply with all applicable laws, regulations and permits.

#### 5.10 *Delegation of Professional Design Services*

- A. Seller will not be required to provide professional design services unless such services are specifically required by the Contract Documents or unless such services are required to carry out Seller's responsibilities for furnishing the Goods and Special Services. Seller shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to the Goods and Special Services are specifically required of Seller by the Contract Documents, Buyer

and Engineer will specify all performance and design criteria that such services must satisfy. Seller shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Goods and Special Services designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Buyer and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Buyer and Engineer have specified to Seller all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 5.10, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 5.06.D.2.
- E. Seller shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

#### ARTICLE 6 – SHIPPING AND DELIVERY

##### 6.01 *Shipping*

- A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling and any other costs associated with shipment and delivery.

##### 6.02 *Delivery*

- A. Seller shall deliver the Goods FOB to the Point of Destination in accordance with the Contract Times set forth in the Agreement, or other date agreed to by Buyer and Seller.
- B. Seller shall provide written notice to Buyer at least ten (10) days before shipment of the manner of shipment and the anticipated delivery date. The notice shall also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours notice by telephone prior to the anticipated time of delivery.
- C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.
- D. Buyer will assure that adequate facilities are available to receive delivery of the Goods during the Contract Times for delivery set forth in the Agreement, or another date agreed by Buyer and Seller.

- E. No partial deliveries shall be allowed, unless permitted or required by the Contract Documents or agreed to in writing by Buyer.

#### 6.03 *Risk of Loss*

- A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of each component of the Goods.
- B. Notwithstanding the provisions of Paragraph 6.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods shall remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

#### 6.04 *Progress Schedule*

- A. Seller shall adhere to the Progress Schedule identified in Paragraph 2.06 as it may be adjusted from time to time as provided below.
  - 1. Seller shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.06) proposed adjustments in the progress schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
  - 2. Proposed adjustments in the progress schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 7. Adjustments in Contract Times may only be made by a Change Order.

### ARTICLE 7 – CHANGES: SCHEDULE AND DELAY

#### 7.01 *Changes in the Goods and Special Services*

- A. Buyer may at any time, without notice to any surety, make an addition, deletion, or other revision to the Contract Documents with respect to the Goods and Services, within the general scope of the Contract, by a Change Order or Work Change Directive. Upon receipt of any such document, Seller shall promptly proceed with performance pursuant to the revised Contract Documents (except as otherwise specifically provided).
- B. If Seller concludes that a Work Change Directive issued by Buyer affects the Contract Price or Contract Times, then Seller shall notify Buyer within seven (7) days after Seller has received the Work Change Directive, and submit written supporting data to Buyer within fifteen (15) days after such receipt. If Seller fails to notify Buyer within seven (7) days, Seller waives any Claim for such adjustment. If Buyer and Seller are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 9.06.

- C. Seller shall have the right to make immaterial changes to the Goods and the Special Services as and when reasonably required in its sole discretion, provided that (a) such change does not affect the Contract Price, the Contract Times or the ability of the Goods to meet performance criteria in the Contract Documents, and (b) the Seller provides prompt written notice to the Buyer and the Engineer thereof.
- D. Seller shall not suspend performance while Buyer and Seller are in the process of making such changes and any related adjustments to Contract Price or Contract Times.

7.02 *Changing Contract Price or Contract Times*

- A. The Progress Schedule, Contract Price or Contract Times may only be changed by a Change Order.
- B. Any Claim for an adjustment in the Progress Schedule, Contract Price or Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 9.06.
- C. If Seller is prevented from delivering the Goods or performing the Special Services within the Contract Times for any unforeseen reason beyond its control and not attributable to its actions or inactions, then Seller shall be entitled to an adjustment of the Contract Times to the extent attributable to such reason. Such reasons include but are not limited to acts or neglect by Buyer, inspection delays, fires, floods, epidemics, abnormal weather conditions, acts of God, and other like matters. If such an event occurs and delays Seller's performance, Seller shall notify Buyer in writing within fifteen (15) days of knowing or having reason to know of the beginning of the event causing the delay, stating the reason therefor.
- D. Seller shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Seller. Delays attributable to and within the control of Seller's subcontractors or suppliers shall be deemed to be delays within the control of Seller.
- E. If Seller is prevented from delivering the Goods or furnishing the Special Services within the Contract Times due to the actions or inactions of Buyer, Seller shall be entitled to any reasonable and necessary additional costs arising out of such delay to the extent directly attributable to Buyer provided Seller notifies Buyer in writing of such delay within seven (7) days from the date on which Seller discovers or should have discovered the cause for the delay and Buyer fails to correct the action, inaction or other cause of such delay within seven (7) days from the receipt of such notice.
- F. Neither Buyer nor Seller shall be entitled to any damages arising from delays which are beyond the control of both Buyer and Seller, including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, and other like matters.
- G. No Adjustments in the Contract Times or Contract under Paragraph 7.02 shall be permitted for a delay (1) to the extent it arises in whole or in part out of an act, error, or omission of the Seller or its subcontractors or any person any of them respectively may be responsible for; (2) that could have been mitigated by commercially reasonable efforts of the Seller; or (3)

that could have been limited or mitigated by the Seller's timely notice to the Buyer of the delay, or reasonable likelihood that such delay will occur.

- H. Notwithstanding any other provision set out herein or in the Contract Documents, the liability of the Seller for not meeting the Contract Times with respect to the Goods identified below shall be limited to the liquidated damages set out in this Paragraph (the "LDs"). LDs in the amount of Fifteen Hundred Dollars (\$1,500.00) per day shall be payable, upon successful completion of the performance tests if the delivery of any of the following Goods was made to the Point of Destination more than fifteen (15) days after the Scheduled Delivery Date identified on the Progress Schedule:

- (a) boiler;
- (b) turbine; and
- (c) generator.

The LDs shall be assessed independently with respect to each of the Goods identified. LDs shall not be payable with respect to any delay caused by the Buyer, the Engineer, or their employees, agents, contractors and subcontractors. The total aggregate amount of LDs hereunder shall be limited to six percent (6%) of the Contract Price.

- I. Notwithstanding any other provision set out herein or in the Contract Documents, the Seller shall be entitled to incentive payments in the amount of Fifteen Hundred Dollars (\$1,500.00) per day if the delivery of each of the following conforming goods is made to the Point of Destination more than fifteen (15) days prior to the Scheduled Delivery Date identified on the Progress Schedule:

- (a) boiler;
- (b) turbine; or
- (c) generator.

The incentive payments shall be earned independently with respect to each of the Goods identified above. The incentive payments shall be payable upon successful completion of the performance tests. Notwithstanding anything to the contrary in the foregoing, the Seller shall not be entitled to incentive payments for more than twenty (20) days for each of the Goods identified above and the aggregate amount of all incentive payments shall not exceed Ninety Thousand Dollars (\$90,000.00).

- J. If for any reason beyond either party's control, including but not limited to (1) labor disputes, strikes and embargoes, (2) present or future government regulations, (3) acts of God, and (4) war, invasion, insurrection, riot or order of any civil authority (a "Force Majeure Event"), either party is not able to perform this Contract in accordance with the Contract Times, the party unable to perform will be conclusively deemed not to be in breach of this Contract. A party affected by a Force Majeure Event must give the other party written notice of the event as soon as practicable. Notwithstanding the foregoing, upon the occurrence of a Force


Majeure Event and the notice detailed above, the parties shall convene a meeting in respect of same, and in the event the Force Majeure Event relates to the ability of the Seller to meet the delivery obligations as per the Contract Times, the Seller shall provide all reasonable alternatives to address such inability to meet Contract Times, including expedited shipping and alternative suppliers.

## ARTICLE 8 – BUYER’S RIGHTS

### 8.01 *Inspections and Testing*

#### A. *General:*


1. The Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller’s facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.
2. Seller shall reimburse Buyer for all expenses, except for lodging and subsistence expenses of Buyer’s and Engineer’s representatives, for inspections and tests specified in the Contract Documents, if as the result of any such specified testing the Goods are determined to be non-conforming or otherwise not in accordance with the performance and design criteria in the Contract Documents and additional inspections and testing are required.
3. Buyer shall bear all expenses of inspections and tests that are not specified in the Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 8.01.A.2 immediately above); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any subsequent re-inspection or retesting, unless such re-inspection or retesting results in a determination that the Goods are determined to be conforming. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Contract Documents specify are to be observed by Buyer prior to shipment.
4. Buyer will give Seller timely notice of all specified tests, inspections and approvals of the Goods which are to be conducted at the Point of Destination.
5. If, on the basis of any inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of said inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 8.02.
6. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections shall constitute acceptance of non-conforming Goods, or prejudice Buyer’s rights under the Contract.



B. Inspection on Delivery:

1. Buyer or Engineer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods and general verification of quantities and observation of apparent condition in order to provide a basis for a progress payment. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.
2. Within five (5) business days of such visual inspection, Buyer shall provide Seller with written notice of Buyer's determination regarding non-conformity of the Goods. In the event Buyer does not provide such notice, it will be presumed that the Goods appear to be conforming and that Buyer has acknowledged their receipt upon delivery.
3. If, on the basis of the visual inspection specified in Paragraph 8.01.B.1, the Goods appear to be conforming, Buyer's notice thereof to Seller will acknowledge receipt of the Goods.

C. Final Inspection:

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as indicated, Buyer or Engineer will make a final inspection.
  2. If, on the basis of the final inspection, the Goods are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods.
  3. If, on the basis of the final inspection, the Goods are non-conforming, Buyer will identify the non-conformity in writing.
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8.02 *Non-Conforming Goods and Special Services*

- A. If on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 8.03, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods including all work reasonably required for reinstallation of the Goods if the Goods were installed in the Project before their nonconformity was discovered.
- B. Buyer's Rejection of Non-Conforming Goods:
  1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Contract Times, remove and replace the rejected Goods.



2. Seller shall bear the costs, losses and damages attributable to the removal and replacement of the non-conforming Goods as provided in Paragraph 8.02.E.

C. Remedying Non-Conforming Goods and Special Services:

1. If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.
2. If Buyer notifies Seller in writing that any of the Special Services are non-conforming, Seller shall promptly provide conforming services acceptable to Buyer. If Seller fails to do so, Buyer may delete the Special Services and reduce the Contract Price a commensurate amount.

D. Buyer's Acceptance of Non-Conforming Goods:

Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer may accept the non-conforming Goods. Seller shall bear the reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods as provided in Paragraph 8.02.E.

- E. Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods and Special Services. Seller's obligations shall include the costs of the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, and obtaining conforming Special Services from others.

F. Buyer's Rejection of Conforming Goods:

If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.

### 8.03 Correction Period

- A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year commencing on the earlier of the date on which the Project successfully passes its performance tests or December 31, 2018, provided however that nothing in the foregoing shall be construed to limit any longer warranty or correction

period under any warranty provided by the Seller's vendors or subcontractors, provided such warranties have been properly assigned to Buyer no later than the expiration of the Seller's correction period.

## ARTICLE 9 – ROLE OF ENGINEER

### 9.01 *Duties and Responsibilities*

- A. The duties and responsibilities and the limitations of authority of Engineer are set forth in the Contract Documents.

### 9.02 *Clarifications and Interpretations*

- A. Engineer will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents as Engineer may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. Such written clarifications and interpretations will be binding on Buyer and Seller. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the Contract Price or Contract Times, either may make a Claim therefor.

### 9.03 *Authorized Variations*

- A. Engineer may authorize minor deviations or variations in the Contract Documents by: (1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 5.06.C.4, or (2) a Field Order.

### 9.04 *Rejecting Non-Conforming Goods and Special Services*

- A. Engineer will have the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer will also have authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 8.01 whether or not the Goods are fabricated or installed, or the Special Services are completed.

### 9.05 *Decisions on Requirements of Contract Documents*

- A. Engineer will be the initial interpreter of the Contract Documents and judge of the acceptability of the Goods and Special Services. Claims, disputes and other matters relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Contract Documents pertaining to Seller's performance will be referred initially to Engineer in writing with a request for a formal decision in accordance with this paragraph.
- B. When functioning as interpreter and judge under this Paragraph 9.05, Engineer will not show partiality to Buyer or Seller and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by Engineer pursuant to this Paragraph 9.05 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as

provided in Paragraph 10.07) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

#### 9.06 *Claims and Disputes*

- A. *Notice:* Written notice of each Claim relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Contract Documents pertaining to either party's performance shall be delivered by the claimant to Engineer and the other party to the Agreement within five (5) days after the occurrence of the event giving rise thereto, and written supporting data shall be submitted to Engineer and the other party within fifteen (15) days after such occurrence unless Engineer allows an additional period of time to ascertain more accurate data.
- B. *Engineer's Decision:* Engineer will review each such Claim and render a decision in writing within ten (10) days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- C. Engineer's written decision on such Claim will be final and binding upon Buyer and Seller fifteen (15) days after it is issued unless within fifteen (15) days of issuance Buyer or Seller appeals Engineer's decision by initiating dispute resolution of such Claim in accordance with the procedures set forth in Article 13.
- D. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 9.06.
- E. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the time periods established in this Paragraph 9.06; if so, a written record of such mutual agreement should be made and jointly executed.

### ARTICLE 10 – PAYMENT

#### 10.01 *General*

- A. Seller and Buyer acknowledge and agree that Applications for Payment shall be required for all payments. The progress payments designated for "Expedited Review" on the Payment Schedule shall be paid by wire transfer within five (5) business days from the date on which the Seller delivers an Application for Payment with the required documents to Buyer and Engineer. All other Progress Payments shall be paid by the Buyer by wire transfer within ten (10) business days of the date the Buyer and Engineer receive the application for payment together with evidence reasonably acceptable to the Engineer showing that the Milestone identified on the Payment Schedule has been achieved.

#### 10.02 *Applications for Progress Payments*

- A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Contract Documents and also as Buyer or Engineer may reasonably require. The timing and amounts of progress payments shall be as stipulated in the Agreement.
1. Applications for Payment shall be submitted upon the meeting of any Milestone as provided for in the Contract Times. As applicable, the application will be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights. In the case of multiple deliveries of Goods, additional Applications for Payment accompanied by the required documentation will be submitted as Buyer acknowledges receipt of additional items of the Goods.
  2. Upon request from Buyer, Seller shall grant Buyer a properly perfected security interest in all Goods in Seller's possession at the time application for such progress payment is made and provide proof of such perfection.
  3. Upon request from Buyer, Seller shall physically segregate and identify those Goods in which Buyer has a security interest.
  4. Upon request from Buyer, Seller shall grant access to Engineer to observe the Goods during production.
  5. Upon request from Buyer, Seller shall provide Buyer with proof of insurance necessary to protect Buyer's interest in the Goods at their location.

#### 10.03 *Review of Applications for Progress Payments*

- A. Engineer will, within five (5) business days after receipt of each Application for Payment for which an engineering review is necessary, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Seller may make the necessary corrections and resubmit the Application.
1. Engineer's recommendation of payment requested in the first Application for Payment will constitute a representation by Engineer, based on Engineer's review of the Application for Payment and the accompanying data, that the Shop Drawings and Samples have been reviewed and approved as required by the Contract Documents and Seller is entitled to payment of the amount recommended.
  2. Engineer's recommendation of payment requested in the Application for Payment submitted upon Buyer's acknowledgment of receipt of the Goods will constitute a representation by Engineer, based on Engineer's review of the Application for Payment and the accompanying data Seller is entitled to payment of the amount recommended.

Such recommendation will not constitute a representation that Engineer has made a final inspection of the Goods, that the Goods are free from non-conformities, acceptable or in conformance with the Contract Documents, that Engineer has made any investigation as to Buyer's title to the Goods, that exhaustive or continuous inspections have been made to check the quality or the quantity of the Goods beyond the responsibilities specifically assigned to Engineer in the Contract Documents or that there may not be other matters or issues between the parties that might entitle Seller to additional payments by Buyer or Buyer to withhold payment to Seller.

3. Engineer may refuse to recommend that all or any part of a progress payment be made, or Engineer may nullify all or any part of any payment previously recommended if, in Engineer's opinion, such recommendation would be incorrect or if on the basis of subsequently discovered evidence or subsequent inspections or tests Engineer considers such refusal or nullification necessary to protect Buyer from loss because the Contract Price has been reduced, Goods are found to be non-conforming, or Seller has failed to furnish acceptable Special Services.


10.04 *Intentionally Omitted*

10.05 *Final Application for Payment*

- A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer, furnished all Special Services, and delivered all documents required by the Contract Documents, Engineer will issue to Buyer and Seller a notice of acceptance. Seller may then make application for final payment following the procedure for progress payments. The final Application for Payment will be accompanied by all documentation called for in the Contract Documents, a list of all unsettled Claims, and such other data and information as Buyer or Engineer may reasonably require.

10.06 *Final Payment*

- A. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Contract Documents, and that Seller has fulfilled all other obligations under the Contract Documents, then Engineer will, within ten (10) days after receipt of the final Application for Payment, recommend in writing final payment subject to the provisions of Paragraph 10.07 and present the Application to Buyer. Otherwise, Engineer will return the Application to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the Application for payment. If the Application and accompanying documentation are appropriate as to form and substance, Buyer shall, within thirty (30) days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages to which Buyer is entitled.




### 10.07 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
1. a waiver of all Claims by Buyer against Seller, except Claims arising from unsettled liens from non-conformities in the Goods or Special Services appearing after final payment, from Seller's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Seller's continuing obligations under the Contract Documents; and
  2. a waiver of all Claims by Seller against Buyer (other than those previously made in accordance with the requirements herein and listed by Seller as unsettled as required in Paragraph 10.05.A, and not resolved in writing).

## ARTICLE 11 – CANCELLATION, SUSPENSION, AND TERMINATION

### 11.01 *Cancellation*

- 
- A. Buyer has the right to cancel the Contract, without cause, at any time prior to first delivery of any Goods (excluding drawings and other engineering deliverables), upon ten (10) business days prior notice. Cancellation pursuant to the terms of this paragraph shall not constitute a breach of contract by Buyer. Upon cancellation Buyer shall pay Seller the greater of six percent (6%) of the Contract Price or its direct and indirect costs incurred in producing any Goods related to the Project, plus a fair and reasonable amount for overhead and profit, provided that the Seller shall make reasonable efforts to reuse or resale any material or equipment which may be reasonably incorporated in work not associated with the Project. For greater certainty, the cost of cancellation payable to the Seller shall include without limitation, any reasonable cost of terminating any subcontracts for materials or equipment, whether for customized goods or otherwise, where applicable.

### 11.02 *Suspension of Performance by Buyer*

- A. Buyer has the right to suspend performance of the Contract for up to a maximum of ninety (90) days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Contract Times and Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

### 11.02 *Suspension of Performance by Seller*

- A. Subject to the provisions of Paragraph 5.07.B, Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:
1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Contract; and,

2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Contract, and Buyer has failed to provide such assurances within ten (10) days of receipt of Seller's written request.

### 11.03 Breach and Termination

#### A. Buyer's Breach:

1. Buyer shall be deemed in breach of the Contract if it fails to comply with any material provision of the Contract Documents, including but not limited to:
  - a. wrongful rejection or revocation of Buyer's acceptance of the Goods,
  - b. failure to make payments in accordance with the Contract Documents, or
  - c. wrongful repudiation of the Contract.
2. Seller shall have the right to terminate the Contract for cause by declaring a breach should Buyer fail to comply with any material provisions of the Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.
  - a. In the event Seller believes Buyer is in breach of its obligations under the Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have seven (7) days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

#### B. Seller's Breach:

1. Seller shall be deemed in breach of the Contract if it fails to comply with any material provision of the Contract Documents, including, but not limited to:
  - a. failure to deliver the Goods or perform the Special Services in accordance with the Contract Documents,
  - b. wrongful repudiation of the Contract, or
  - c. delivery or furnishing of non-conforming Goods and Special Services.
2. Buyer may terminate Seller's right to perform the Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.
  - a. In the event Buyer believes Seller is in breach of its obligations under the Contract, and except as provided in Paragraph 11.04.B.2.b, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have seven (7) days from

receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to commence cure, and to thereafter proceed diligently to cure such alleged breach.

*of the CD's* b. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 4.01, the notice and cure procedures of that bond, if any, shall supersede the notice and cure procedures of Paragraph 11.04.B.2.a.

*§ 3 of Bond*

## ARTICLE 12 – LICENSES AND FEES

### 12.01 *Intellectual Property and License Fees*

- A. Subject to the license set forth in this section 12.01.A, Seller shall retain, all intellectual property rights, including copyright or patent rights, in its design for the Goods, including any such intellectual property incorporated into any drawings, specifications, operation manuals, or other similar materials prepared by Seller, its vendors, subcontractors and their respective consultants (the “Seller Design Documents”). Seller, on behalf of itself, its vendors and subcontractors and their respective consultants, grants the Buyer, its contractors, and the Engineer, a non-exclusive license, including the right to create derivative works to use the Seller Design Documents for the purpose of constructing, operating, maintaining, and modifying the Project.
- B. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Contract Documents.

### 12.02 *Seller's Infringement*

- A. Subject to Paragraph 12.01.A, Seller shall indemnify and hold harmless Buyer, Engineer and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any United States or foreign patent or copyright by any of the Goods as delivered hereunder.
- B. In the event of suit or threat of suit for intellectual property infringement, Buyer will promptly notify Seller of receiving notice thereof.
- C. Seller shall promptly defend the claim or suit, including negotiating a settlement. Seller shall have control over such claim or suit, provided that Seller agrees to bear all expenses and to satisfy any adverse judgment thereof.
1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound in any subsequent suit or claim against Seller by Buyer by any factual determination in the prior suit or claim.



2. If Buyer fails to provide Seller the opportunity to defend such suit or claim after written notice by Seller, Buyer shall be barred from any remedy against Seller for such suit or claim.
- D. If a determination is made that Seller has infringed upon intellectual property rights of another, Seller may obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction as necessary to avoid the infringement at Seller's own expense.

#### 12.03 *Buyer's Infringement*

- A. Buyer shall indemnify and hold harmless Seller, and its officers, directors, partners, employees, agents, consultants, contractors, and subcontractors from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any United States or foreign patent or copyright caused by Seller's compliance with Buyer's design of the Goods or Buyer's use of the Goods in combination with other materials or equipment in any process (unless intent of such use was known to Seller and Seller had reason to know such infringement would result).
- B. In the event of suit or threat of suit for intellectual property infringement, Seller must after receiving notice thereof promptly notify Buyer.
- C. Upon written notice from Seller, Buyer shall be given the opportunity to defend the claim or suit, including negotiating a settlement. Buyer shall have control over such claim or suit, provided that Buyer agrees to bear all expenses and to satisfy any adverse judgment thereof.
1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound in any subsequent suit or claim against Buyer by Seller by any factual determination in the prior suit or claim.
  2. If Seller fails to provide Buyer the opportunity to defend such suit or claim after written notice by Buyer, Seller shall be barred from any remedy against Buyer for such suit or claim.

#### 12.04 *Reuse of Documents*

- A. Neither Seller nor any other person furnishing any of the Goods and Special Services under a direct or indirect contract with Seller shall: (1) acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions (the "Engineer Design Documents;" or (2) reuse any of such Drawings, Specifications, other documents, or copies thereof on any other project without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer. Nothing in this section 12.04.A shall be construed to prevent the use of the Engineer Design Documents in connection with the design and manufacture of the Goods. This prohibition will survive

termination or completion of the Contract. Nothing herein shall preclude Seller from retaining copies of the Contract Documents for record purposes.

#### 12.05 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, copies of data furnished by Buyer or Engineer to Seller, or by Seller to Buyer or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days, after which the receiving party shall be deemed to have accepted the data thus transferred. The transferring party will correct any errors detected within the sixty (60) day acceptance period.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

### ARTICLE 13 – DISPUTE RESOLUTION

#### 13.01 *Dispute Resolution Method*

- A. Either Buyer or Seller may initiate dispute resolution of any Claim decided in writing by Engineer under Paragraph 9.06.B or 9.06.C before such decision becomes final and binding. Upon notice in writing of submission to dispute resolution, senior officers of each party shall promptly engage in discussions with an aim to resolve the dispute. In the event such discussions have not been successful within fifteen (15) days of the notice, either party shall have the right to initiate arbitration in accordance with Paragraph 13.02. Timely submission of the request shall stay the Engineer's decision from becoming final and binding.
- B. If the process above does not result in resolution of the Claim, then Engineer's written decision under Paragraph 9.06.B or a denial pursuant to Paragraph 9.06.C shall become final and binding fifteen (15) days after termination of the fifteen (15) day period set out above for discussions, unless, within that time period, Buyer or Seller submits a demand for arbitration in accordance with Paragraph 13.02.

#### 13.02 *Arbitration.*

- A. All Claims or counterclaims, disputes, or other matters in question between Buyer and Seller arising out of or relating to the Contract Documents or the breach thereof (except for Claims which have been waived by the making or acceptance of final payment as provided by Paragraph 10.07) not resolved under the provisions of Paragraph 13.01 will be decided by

binding arbitration in accordance with the rules of the American Arbitration Association, subject to the conditions and limitations of this Paragraph 13.02. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction. Unless otherwise agreed by the parties, the arbitration proceedings will take place in the State of Maine.

- B. No demand for arbitration of any Claim or counterclaim, dispute, or other matter that is required to be referred to Engineer initially for decision in accordance with Paragraph 9.06 will be made until the earlier of: (1) the date on which Engineer has rendered a written decision; or (2) the 31st day after the parties have presented their final evidence to Engineer if a written decision has not been rendered by Engineer before that date. Subject to the provisions of 13.02.A, no demand for arbitration of any such Claim or counterclaim, dispute, or other matter will be made later than thirty (30) days after the date on which Engineer has rendered a written decision in respect thereof in accordance with Paragraph 9.06, and the failure to demand arbitration within said thirty (30) day period will result in Engineer's decision being final and binding upon Buyer and Seller. If Engineer renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but will not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned.
- C. Notice of the demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitrator or arbitration provider, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the 30-day period specified in Paragraph 13.02.B, and in all other cases within a reasonable time after the Claim or counterclaim, dispute, or other matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such Claim or other dispute or matter in question would be barred by the applicable statute of limitations.
- D. No arbitration arising out of or relating to the Contract Documents shall include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and
  2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings.
- E. The award rendered by the arbitrator shall be in writing and include: (1) a concise breakdown of the award; and (2) a written explanation of the award specifically citing the Contract Document provisions deemed applicable and relied on in making the award.
- F. The award will be consistent with the agreement of the parties and final judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal.



## ARTICLE 14 – MISCELLANEOUS

### 14.01 *Meetings and Meeting Notes*

- A. The parties acknowledge and agree that weekly meetings shall occur between the designated representatives of the Buyer and the Seller, plus the Engineer and other members of their respective project teams as requested by the Seller, acting reasonably. It is agreed that the Engineer shall take notes corresponding to such meetings and deliver to the parties an electronic copy of such notes within two (2) business days.

### 14.02 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if: (1) delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or (2) if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

### 14.03 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Point of Destination is located. The parties agree that, except as provided in Paragraph 13.02, the courts of the State of Maine and/or the United States District Court for the District of Maine, shall have exclusive jurisdiction over claims arising out of or in connection with this Agreement and the Goods and the Seller agrees to submit to the jurisdiction of said courts.
- B. In the case of any direct conflict between the express terms of this Contract and the Uniform Commercial Code, as adopted in the state whose law governs, it is the intent of the parties that the express terms of this Contract shall apply.




### 14.04 *Computation of Time*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

### 14.05 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.



14.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Goods and Special Services and termination or completion of the Agreement.

14.07 *Entire Agreement*

- A. Buyer and Seller agree that this Agreement is the complete and final agreement between them, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Agreement may not be altered, modified, or amended except in writing signed by an authorized representative of both parties.

**PERFORMANCE BOND  
FOR PROCUREMENT CONTRACTS**

Any singular reference to Seller, Surety, Buyer, or other party shall be considered plural where applicable.

SELLER (Name and Address):

**KMW Energy Inc.**  
635 Wilton Grove Road  
London, ON N6N 1N7, Canada

SURETY (Name and Address of Principal  
Place of Business):

**Liberty Mutual Insurance Company**  
181 Bay Street, Suite 1000  
Toronto, ON M5J 2T3

BUYER (Name and Address):

**Georges River Energy, LLC**  
P.O. Box 9, 53 Ghent Road  
Searsmont, ME 04973, USA

**CONTRACT**

Date: **December 6, 2016**

Amount: **\$12,825,000.00**

Description (Name and Location): **Proposal No. 15025, 8.5 MW Biomass Fired CHP System  
53 Ghent Road, Searsmont Maine 04973**

**BOND**

Date (Not earlier than Contract Date): **December 13, 2016**

Bond Number: **BDTO-150002-016**

Amount: **\$6,412,500.00**

Modifications to this Bond Form: **N/A**

Surety and Seller, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

**Seller as Principal**

Company: **KMW Energy Inc.**

(Corp. Seal)

Signature:

Name and Title:

*Eric Aiken, CEO*

**Surety**

Company: **Liberty Mutual Insurance Company**

(Corp. Seal)

Signature:

Name and Title: **Emily Simas, Attorney-in-fact**  
(Attach Power of Attorney)

Address: **181 Bay Street, Suite 1000  
Toronto, ON M5J 2T3**

Telephone Number: **416-307-4682**

(Space is provided below for signatures of additional parties, if required.)



**Seller as Principal**

Company: (Corp. Seal)

**Surety**

Company: (Corp. Seal)

Signature:  
Name and Title:

Signature:  
Name and Title:  
Address:  
Telephone Number:

1. Seller and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to Buyer for the performance of the Contract, which is incorporated herein by reference. For purposes of this bond, Buyer means Buyer's assigns, if and when Buyer has assigned the Contract.
2. If Seller performs the Contract, Surety and Seller have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
3. If there is no Buyer Default, Surety's obligation under this Bond shall arise after:
  - 3.1. Buyer has notified Seller and Surety pursuant to Paragraph 10 that Buyer is considering declaring a Seller Default and has requested and attempted to arrange a conference with Seller and Surety to be held not later than 7 days after receipt of such notice to discuss methods of performing the Contract. (If Buyer, Seller, and Surety agree, Seller shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Buyer's right, if any, subsequently to declare a Seller Default); and
  - 3.2. Buyer has declared a Seller Default and formally terminated Seller's right to complete the Contract. Such Seller Default shall not be declared earlier than 14 days after Seller and Surety have received notice as provided in Paragraph 3.1; and
  - 3.3. Buyer has agreed to pay the Balance of the Contract Price to:
    - a. Surety in accordance with the terms of the Contract;
    - b. Another seller selected pursuant to Paragraph 4.3 to perform the Contract.
4. When Buyer has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:
  - 4.1. Arrange for Seller, with consent of Buyer, to perform and complete the Contract; or
  - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
  - 4.3. Obtain bids or negotiated proposals from qualified sellers acceptable to Buyer for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Buyer and a seller selected with Buyer's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and



pay to Buyer the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Buyer resulting from Seller Default; or

- 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new seller, and with reasonable promptness under the circumstances, either:
  - a. determine the amount for which it may be liable to Buyer and, as soon as practicable after the amount is determined, tender payment therefor to Buyer; or
  - b. deny liability in whole or in part and notify Buyer citing reasons therefor.
5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Buyer to Surety demanding that Surety perform its obligations under this Bond, and Buyer shall be entitled to enforce any remedy available to Buyer. If Surety proceeds as provided in paragraph 4.4, and Buyer refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Buyer shall be entitled to enforce any remedy available to Buyer.
6. After Buyer has terminated Seller's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3, then the responsibilities of Surety to Buyer shall not be greater than those of Seller under the Contract, and the responsibilities of Buyer to Surety shall not be greater than those of Buyer under the Contract. To a limit of the amount of this Bond, but subject to commitment by Buyer of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
  - 6.1. the responsibilities of Seller for correction or replacement of defective Goods and Special Services and completion of the Contract;
  - 6.2. Additional legal, design professional, and delay costs resulting from Seller's Default, and resulting from the actions of or failure to act of Surety under Paragraph 4; and
  - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Seller.
7. Surety shall not be liable to Buyer or others for obligations of Seller that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Buyer or its heirs, executors, administrators, successors, or assigns.
8. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location of the Point of Destination, and shall be instituted within two years after Seller Default or within four years after Seller has delivered the Goods required by the contract or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Buyer or Seller shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Point of Destination, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1. *Balance of the Contract Price*: The total amount payable by Buyer to Seller under the Contract after all proper adjustments have been made, including allowance to Seller of any amounts received or to be received by Buyer in settlement of insurance or other Claims for damages to which Seller is entitled, reduced by all valid and proper payments made to or on behalf of Seller under the Contract.

12.2. *Contract*: The agreement between Buyer and Seller identified on the signature page, including all Contract Documents and changes thereto.

12.3. *Seller Default*: Failure of Seller, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. *Buyer Default*: Failure of Buyer, which has neither been remedied nor waived, to pay Seller as required by the Contract or to perform and complete or comply with the other terms thereof.



LIBERTY MUTUAL INSURANCE COMPANY  
181 Bay Street, Suite 1000, Brookfield Place, Toronto, Ontario M5J 2T3

## Power of Attorney

Number: 0004 – Amendment No. 3

Seal # 002

KNOW ALL PERSONS BY THESE PRESENTS that Liberty Mutual Insurance Company (the 'Company') does hereby name, constitute and appoint:

Wendy Findlay  
Louise Keck  
K. Bart Porter  
Scott Robinson  
Michael Schepers  
Emily Simas  
Jon Tondeur


,each individually (if there be more than one person named), its true and lawful attorney to make, execute, seal, acknowledge and deliver for and on its behalf as surety and as its act and deed, any and all bid bonds, consents of surety, performance bonds, labour and material payment bonds, maintenance bonds, commercial surety bonds and other surety obligations which, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the President and attested by the Secretary of the Company.

Provided, however, that this power of attorney may be revoked by the Company at any time and for any reason upon notice to the attorney.

Provided, further, that this power of attorney supersedes and replaces all previous versions of Power of Attorney Number 0004.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed to by an authorized officer or official of the Company and the corporate seal of the Company has been affixed hereto in the City of Toronto, Ontario, Canada this 2nd day June 2014.

Liberty Mutual Insurance Company

By:   
Paul McIntyre  
AVP, Canadian Surety

LIBERTY MUTUAL INSURANCE COMPANY  
181 Bay Street, Suite 1000, Brookfield Place, Toronto, Ontario M5J 2T3



Date: December 14, 2016

No. BDTO-150002-016

Liberty Mutual Insurance Company

RE: Notice under Part XIII of the Insurance Companies Act (Canada)

For purposes of the Insurance Companies Act (Canada), the document referenced above was issued in the course of Liberty Mutual Insurance Company's insurance business in Canada





BIOMASS FIRED ENERGY SYSTEM, PROPOSAL 15025 REV.9  
GEORGES RIVER ENERGY, LLC.

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DECEMBER 6, 2016

**PROPOSAL NO. 15025 REV.9**

**DECEMBER 6, 2016**

**8.5 MW BIOMASS FIRED CHP SYSTEM**

**GEORGES RIVER ENERGY, LLC**

**SEARSMONT, MAINE**



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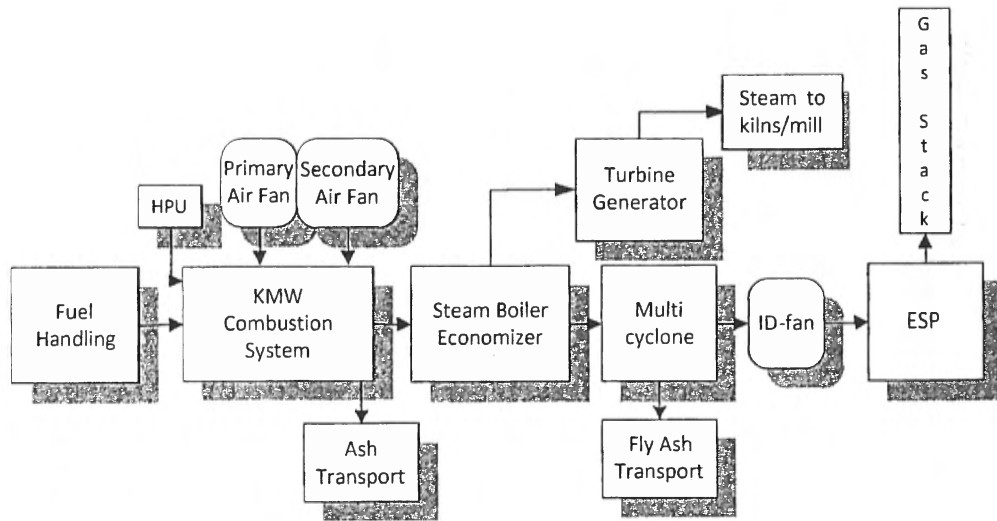


**GENERAL**

KMW ENERGY is pleased to submit a proposal for a KMW Biomass Fired Energy System to be installed at Georges River Energy ("GRE"), LLC facility located at Robbins Lumber, Inc in Searsmont, Maine. The system is intended to generate high pressure steam for power generation and kiln drying.

**SYSTEM DESCRIPTION**

The proposed system is based one of our standard Boiler Modules generating 95,000 lb/hr of high pressure steam. The system is comprised of; fuel bin w/ unloading system, fuel transfer conveyors, KMW combustion system model TRF including primary thermal gasification chamber and secondary combustion stage, heat recovery steam generator, soot blowers, economizer, deaerator, feedwater pumps, blowdown tank, fluegas ducting, multicyclone flyash collector, electrostatic precipitator for emission control, induced draft fan, automatic ash collection and removal from the boiler system. Also included is a steam turbine & generator set including condenser and cooling system. The fully automatic control system is PLC based with computer operator interface.



The design is well proven over a wide range of applications and different fuels.



## SCOPE OF WORK

KMW proposes to design, engineer, and supply the boiler systems described in this proposal and as shown on our drawing No. 1684-000-01E.

The limits of our supply scope is as follows:

1. Fuel System –from and including the 1-hour surge bin.
2. Steam System – up to the boiler stop check valve outlet flange, at the inlet of the sootblower steam piping control valve, and at the steam inlet flange on the deaerator.
3. Boiler Feedwater System – at the inlet flange before the boiler feedwater control valve. (Note: Each feedwater pump is supplied with a recirculating valve and motor mounted on a unitary steel base).
4. Ash Transfer System – up to the discharge flange of the ash transfer conveyor for each of the two ash containers. Ash containers not included.
5. Gas Vent System – Fluegas ducting from boiler exhaust to the gas stack on the ESP including expansion joints as required. Insulation by others.
6. Structural Steel – Structural steel framing to support the boilers, economizers and fluegas ducting.
7. Control System – KMW to provide complete control system for all supplied equipment as well as a Human-Machine-Interface (HMI).
8. Turbine Live Steam - At inlet to turbine emergency stop valve.
9. Turbine Drains - At base level of the respective equipment.
10. Cooling Water - Inlet and outlet flange of cooling water connection on the oil cooler and generator air cooler. Inlet and outlet flange of each cooling tower.
11. Generated Power - At generator terminals.
12. Generator Breaker - Incoming & Outgoing terminals of breaker.



## DESIGN CRITERIA

The Maximum Continuous Rating (MCR) is 95,000 lbs/hr of steam operating at 900 psig and 900°F steam temperature at the 2<sup>nd</sup> superheater exit. The boiler capacity is 95,000 lbs./hr while the steam turbine only requires 92,400 lbs./hr. for 8.5 MW, thus creating extra steam capacity.

The KMW gasifier system features a sloping, reciprocating grate floor arrangement. Maximum fuel flexibility will be incorporated into the design of the combustion system in order to maximise the economic benefit of this project. The proposed KMW Biomass Fired Steam Generation System will be designed for a high degree of operating flexibility.

Anticipated fuel is a mixture of:

- Green sawmill chips, eastern white pine
- Green sawmill sawdust, eastern white pine
- Bark, eastern white pine, winter supply only
- Planer mill chips, eastern white pine
- On-site chipped softwood
- Biomass chips, mixed hardwood and softwood

The design performance is based on 49.8 % moisture in the fuel mixture calculated on wet basis and a heat content of 8,516 Btu/lb bone dry.

The boiler configuration has been selected with a very conservative design for longevity with the superheater tubes preceded by screen tubes and strategically placed soot blowers throughout the boiler.

The bottom ash and the flyash will be collected separately and deposited in a bunker for each ash type. The flyash will have a dedusting water spray nozzle located the chute to the bunker and controlled by an automatic water valve.

The combustion chamber design will have provisions for adding future nozzles for Ammonia / Urea injection.

The steam turbine will be designed for an exhaust pressure of 2" Hg(A).

The cooling tower system will be designed for a wet bulb temperature of 70.5 F. and will accommodate the heating load from the turbine oil cooler and the generator.



The equipment and materials shall comply with all applicable National Codes, Standards & Regulations.

As required following codes, standards, and regulations shall apply as a minimum:

- ASME Section I and ASME B31.1
- American Boiler Manufacturers Association (ABMA)
- Canadian Institute of Steel Construction (CISC)
- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- American Society for Civil Engineers \*ASCE
- ASTM International (ASTM)
- American Welding Society (AWS)
- Boiler, Pressure Vessel, and Pressure Piping Code (CSA B51)
- Electrical Equipment Manufacturers Association of Canada (EEMAC)
- Edison Electrical Institute (EEI)
- Factory Mutual (FM)
- Institute of Electrical and Electronic Engineers (IEEE)
- International Standards Organization (ISO)
- National Association of Corrosion Engineering (NACE)
- National Board of Boiler and Pressure Vessel Inspectors (NBBPVI)
- National Electrical Manufacturers Association (NEMA)
- Steel Structures Painting Council (SSPC)



BIOMASS FIRED ENERGY SYSTEM, PROPOSAL 15025 REV.9  
GEORGES RIVER ENERGY, LLC.

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DECEMBER 6, 2016

## FIRM PRICE

Engineering: USD \$300,000.00

Terms: 1/3 on Oct 1<sup>st</sup>, 1/3 on Nov 1<sup>st</sup> and 1/3 on Dec 1<sup>st</sup>.

Equipment supply as defined in this proposal: USD \$12,825,000.00

Options:

Description	Price USD
Two year Recommended Operation & Maintenance Spares for the Turbine and Generator as per page 58 & 59	\$46,000.00
Turbine Commissioning Spares as per page 58, Items 1- 6	\$15,000.00
Reduce stack height from 100' to 82' – deduct	\$9,000.00

FOB job site. All applicable US taxes are extra. Duty paid.

## TERMS OF PAYMENT FOR EQUIPMENT SUPPLY

The following is a table showing the payment milestones.

Payment	Milestone	Terms
1	Purchase Order	10%
2	Boiler Ordered	5%
3	ESP Ordered	3%
4	Combustion Chamber Grates Ordered	1%
5	Turbine/Generator Ordered	4%
6	Cooling Tower Ordered	2%
7	Boiler Drums and Boiler Tubes Received in Shop	8%
8	Combustion Chamber Grates Received at Fabrication Shop	4%
9	Combustion Chamber Delivered to jobsite	10%
10	Boiler Delivered to jobsite	10%
11	Turbine & Generator Shipped	5%
12	Turbine & Generator Delivered to jobsite	11%
13	Cooling Tower Delivered to jobsite	3%
14	ESP Delivered to jobsite	4%
15	Starting Up or, in the event that Starting Up is delayed due to circumstances beyond KMW's control, 130 days after last delivery to site, whichever comes first	5%



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Payment	Milestone	Terms
16	Commissioning of the KMW Boiler Equipment or, in the event that commissioning of the KMW equipment is delayed due to circumstances beyond KMW's control, 160 days after last delivery to site, whichever comes first	5%
17	Commissioning of the Turbine/Generator or, in the event that commissioning of the turbine/generator is delayed due to circumstances beyond KMW's control, 160 days after last delivery to site, whichever comes first	5%
18	Performance Testing or, in the event that final testing is delayed due to circumstances beyond KMW's control, 200 days after last delivery to site, whichever comes first	5%

Payments are due by wire transfer upon valid invoice.

## DELIVERY OF EQUIPMENT

As per the Schedule in the EJCDC Agreement.

## PERFORMANCE GUARANTEE

KMW Energy guarantees that the equipment and goods furnished will meet the Performance and Design Criteria identified in this proposal and will continue on a continuous basis when properly operated and maintained.

- Particulate matter (PM) = maximum 0.03 lbs./MMBtu
- NO<sub>x</sub> = maximum 0.15 lbs./MMBtu
- CO = maximum 200 PPM @ 3% O<sub>2</sub>

We trust the foregoing and attachments are in accordance with your requested requirements. Please feel free to contact us for further information or to finalize the contents of this proposal to your satisfaction.

Yours very truly,

Eric B. Rosen, M.Sc., P.Eng.  
CEO



BIOMASS FIRED ENERGY SYSTEM, PROPOSAL 15025 REV.9  
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## SCOPE SUMMARY

Fuel surge bin sized for 1-hour capacity including unloading live bottom screws
Fuel transfer conveyors
Fuel metering bins
Combustion system w/ reciprocating grate system and combustion air fans
Steam boiler w/trim and soot blowers
Economizer w/ soot blowers
Ash Takeout System from TRF gasifier chamber
Multicyclone flyash collector
ID fan
Fluegas ducting from boiler to ESP
Support structures from floor elevation
Ash Collection and transfer system
Control System w/ programming, instrumentation
Deaerator
Feedwater pumps
ElectroStatic Precipitator
Gas stack (on the ESP)
Steam turbine & generator
Steam surface condenser
Condensate pumps
Cooling towers
Circulating pumps for the cooling system
As built drawings
O & M manuals
Electrical drawings for the boiler system
Mechanical installation drawings
Freight to job site
Duty
12 months warranty on the equipment including boiler
24 months warranty on the turbine
Comprehensive Performance Guarantee
Commissioning and startup assistance (see field assistance rate sheet)
Performance testing assistance



## COMPANY PRESENTATION

KMW Energy is a Canadian company specializing in designing and supplying the KMW Energy Systems, which uses renewable biomass as fuels. At the heart of our systems is our combustion technology which, together with auxiliary equipment such as fuel, ash, and flue gas handling, heat recovery units, emission control and automated control system, makes up a complete system.

Our combustion technology and system experience has its roots in our previous parent company founded in 1947 in Sweden. Over 60 years of experience in this field and more than 3,500 systems installed worldwide puts us in a leading position. With this market position comes responsibility to continuously be innovative and to advance the technology. One example of this is the live bottom fuel storage reclaim-system, which is now being marketed by many companies. KMW was one of the pioneering companies of this system in the early 70's and has held a number of related patents. The reciprocating grate technology was first applied for a commercial project in 1980.

The first North American system was installed in 1978 and the KMW Energy Systems have continued to be successfully designed and installed by KMW. With more than one hundred twenty systems installed a large number of distinguished accomplishments have been achieved over the years advancing the technology in the North American market.

KMW takes pride in finding cost effective solutions for our customers' needs. Significant for the KMW Energy System is the high level of engineering effort to customize our well-proven design. This is your guarantee for a well-engineered system to meet your needs using the best available technology.

Our landmark is unmatched fuel flexibility. As biomass is found in many different forms, flexibility in sourcing biomass fuel will ultimately provide the best economic fuel solution. An energy system designed for a maximum of fuel flexibility will not only meet your current needs but also your future needs.

KMW is also active in research and development to enhance our combustion technology and to find new applications for biomass energy, for thermal as well as electrical generation. Collaboration with researchers at NRCan/Canmet, University of Western Ontario, London and McGill University, Montreal has been ongoing for many years.





## BENEFITS OF THE PROPOSED SYSTEM

The **KMW Biomass Fired Energy System** proposed by KMW Energy is of a well-proven design. The long tradition with **over 60 years of experience** provides us with a unique depth of knowledge in this field necessary to offer a well-engineered system at the cutting edge of technology. The company's personnel have the knowledge of both the concept as well as the detail design of any part of the system required to provide the best available technology. There are many important factors to be considered besides initial capital cost when computing the total cost impact of a project.

The KMW Energy Systems are designed to provide **long-term reliability**. All individual components are selected or designed with sufficient margins for durability and long-term continuous operation. The KMW Energy System is designed for **low manpower requirements**. All system functions are fully automated and monitored by the control system to provide the operator with both alarm and system status.

The KMW Energy System is designed to provide **low maintenance and operating costs**. All system components are designed or selected for exceptional performance and reliability. Special attention has been paid to all moving parts and consumables to provide for good reliable operation, high availability and low maintenance cost. All individual parts are of North American manufacture and any consumables are standard, readily available, industrial items.

The KMW Energy System is unique in its **design and operating flexibility**. The layout can be altered to accommodate any situation. Installation is time efficient and can take place with minimum disturbance of existing systems or of other activities on the site. The design is also very forgiving on fuel mixtures.

The KMW Energy System is designed for **efficiency** and incorporates a combustion technology based on our **reciprocating grate** design. Our unique grate cycling pattern resulting in minimal stack emissions achieves the highest degree of combustion efficiency. The fully automatic ash handling system guarantees safe operation.

The KMW Energy System is a **modular design** based on **standardized components**. The design has not only been **optimized for combustion and operating efficiency** but also for **quick and efficient erection**. The quality control at the fabrication level assures compliance with our design specifications.



## EQUIPMENT SUPPLY

The following is a list of equipment and services supplied for the proposed KMW energy system. The equipment supplied is pre-assembled during fabrication into units as large as possible considering reasonable transportation and safe handling.

## FUEL HANDLING SYSTEM

### Fuel Bin, Item 154

One (1) Fuel surge bin made from prefabricated steel panels including support from floor elevation. Bin volume is approximately 2,000 cu.ft. Unloading of the bin is by six 20" dia. screws located on the floor. Includes complete drive assemblies and fuel level control.

### Bin Levelling Screw, Item 188

One (1) Fuel infeed and levelling conveyor for the metering stoker bin. Heavy-duty screw conveyor assembly complete with enclosed trough, access door and bearings. The screw flights are supplied in 3/8" thick A.R. steel continuous welded on a schedule 80 pipe. Drive assembly complete with flange mounted reducer and electric motor. Level sensor for automatic fuel feed control and overfeed protection.



## COMBUSTION SYSTEM

### Combustion System Type TRF, Item 240

One (1) Combustion chamber package including:

- Fabricated in Canada
- Fuel metering bins designed to prevent back draft and to provide even fuel distribution across the width of the grate systems including level sensors for automatic fuel feed controls.
- Heavy-duty fuel stoker screw assemblies complete with enclosed trough and access doors. Screw flites are supplied in 3/8" thick A.R. steel continuous welded on a schedule 80 pipes. Drive assemblies complete with flange mounted reducers and electric motors.
- Prefabricated bottom sections and support frameworks with internally integrated air chambers below the grates, ash dumping grates, grate supports and drive mechanisms.
- Cell enclosures comprised of prefabricated steel wall frames constructed with inner vented panels and roof supports. Overfire air passages and injection ports integrated within the cell wall panels. Air ducts contain air regulation devices for balancing the flow. Fire doors of cast iron.
- KMW reciprocating step grate systems of our patented design. Individually controlled hydraulic cylinders alternately move each level of grates. Hydraulic power units with tank and valves.
- Grates are high-alloyed stainless steel casting containing chromium and nickel for extensive heat and wear resistance.
- The last level of grates will cover the ash-dumping pits thus minimizing any unburned fuel from entering the automatic ashing systems.
- All grate supports are water cooled with pre-piped interconnections. Cooling will be provided with a closed primary loop system with circulating pump and a plate heat exchanger.
- Cell test and draft regulation transmitter ports.
- Forced draft fans to provide underfire and overfire combustion air complete with drive and electric motor.

**Refractory, Item 244**

Refractory material for roof, walls and exposed sections of the primary and secondary chambers with ceramic anchors, insulating firebrick and high temperature block insulation. Minimum temperature rating is 2,800 °F.

Note: Field installations by others.

**Flue Gas Duct, Item 261**

Flue gas duct to inter-connect with the boiler. The duct is refractory lined and is designed for increased residence time and to complete the combustion process. Refractory materials are provided for the duct.

Note: Field installations by others.



## HEAT RECOVERY SYSTEM

### Steam boiler, Item 321

One (1) "Heat recovery Type Package Boiler System", designed to recover energy from the flue gas exhausted from the combustion chamber and produce steam at the following operating conditions and complete as follows:

#### OPERATING CONDITIONS

Capacity	95,000 lb/hr steam
Operating Pressure	900 psig
Operating Temperature	900°F
Feedwater Temperature	235°F
Flue Gas Temperature	300°F (after economizer)

#### HEAT RECOVERY PACKAGE BOILER

The boiler system will include the following:

**One (1) Heat Recovery Type Package Boiler** of the open bottom A-type designed per Section 1 of the ASME Code. The flue gas will enter the boiler at the inlet end, travel horizontally along the length of the boiler parallel to the boiler drums and exit at the boiler outlet end with a once through flue gas flow pattern. The boiler and related pressure part accessories will be registered in the State of Maine as required. The boiler will be manufactured in the USA. The boiler will include:

- One (1) 48" diameter steam drum constructed from SA 516-70 material with one 12" x 16" elliptical access manway at each end of the drum.
- Two (2) 26" diameter water drums constructed from SA 516-70 material with one 12" x 16" elliptical access manway at each end of each drum.
- One (1) Set of steam drum internals designed to produce 1ppm steam purity based on the ASME water quality criteria. Improved purity will result if water purity is superior to the ASME water quality criteria.
- External walls of membrane water cooled construction consisting of 2" OD SA-178A tubes mechanically expanded to the steam and water drums
- Convection bank tubes consisting of 2" OD SA-178A tubes mechanically expanded to the steam and water drums.



- Two (2) Convection zone doors in the sootblower lanes along the lower portion of the boiler.
- Two (2) Superheater Modules designed to increase the steam temperature from the saturated condition to 900 +/-10 °F at the MCR condition. The superheater is a standalone module that is inserted into the boiler and interconnected to the boiler by a supply pipe from the boiler steam drum. The superheaters will have an interstage attemporator to regulate the final steam temperature. Superheater tubes are constructed of SA-213-T22 tubing seal welded to superheater headers.
- One (1) Set of Sootblowers to clean the boiler and superheater gas side heat transfer surface. Sootblowers will accept a steam pressure of between 100 psig and 150 psig from a low pressure header that will be fed from the boiler steam drum. All sootblowers are of the electrically operated type and include an operator panel. Interconnecting piping and valves are included to bring the boiler sootblowers to a common terminal point.
- Two retractable sootblower will be included in the superheater section of the boiler.
- Two rotary sootblowers will be included in the evaporator section of the boiler.
- Factory installed insulation and lagging, except on the ends of the steam and water drums.
- One (1) Set of Boiler trim consisting of:
  - Boiler safety valves per the ASME Code (2 supplied)
  - Superheater safety valve per the ASME Code
  - Drum level transmitter isolation and drain valves (2 supplied)
  - Drum pressure gauge and gauge valves
  - Continuous blowdown stop valve and manual metering control valve
  - Lower drum blow off valves (2 sets of 2 valves)
  - Feedwater stop valve
  - Feedwater check valve
  - Water column, c/w HHWCO, HWA, LWA, LWCO probes, column blowdown valve, blowdown bypass button, bi-colour gage glass with gauge valves and blowdown valve and illuminator.
  - 10 point Eye-Hye remote drum level indicator system complete with (1) remote indicator and bi-colour gage glass with gauge valves and blowdown valve and illuminator.
  - Auxiliary LWCO including isolation and drain valves



- Manual Vent Valve designed for 30% of the maximum steam load, complete with silencer
- Chemical feed stop valve and (1) chemical feed check valve
- Steam sample valve
- Main steam stop non-return valve
- 2<sup>nd</sup> main steam stop valve
- ASME spool piece to interconnect the main steam valves with free blow drain and valves
- Superheater drain valves

## B. INSTRUMENTATION AND CONTROLS

Each boiler system will include the following set of instrumentation and controls:

- **One (1) Three Element Feedwater Flow Control System, c/w**
  - Drum level transmitter, c/w 3-valve manifold
  - Feedwater flow control valve, c/w pneumatic actuator and I/P positioner
  - Isolating and bypass valves for the feedwater flow control valve including piping
  - Feedwater flow orifice plate and flanges
  - Feedwater flow transmitter, c/w 3-valve manifold
  - Steam flow orifice plate and flanges
  - Steam flow transmitter, c/w 3-valve manifold
- **One (1) Steam Temperature Control Systems, c/w**
  - Variable orifice spray injection type desuperheater assembly with integral spray nozzle
  - Spray water flow control valve including motorized isolation valves and piping
  - Inlet steam temperature transmitter
  - Outlet steam temperature transmitter
  - Spray header
  - Interconnecting pipes to and from the superheater module. The steam temperature control system is shipped loose for field installation by the Purchaser.
- **Set of Miscellaneous Instrumentation, including:**
  - High Steam Pressure Switch
  - High-High Steam Pressure Switch
  - Drum Pressure Transmitter
  - Superheater Outlet Pressure Transmitter
  - PRV off the steam drum for 150 psig for the soot blowers.



### Economizer, Item 322

- **One (1) Horizontal Gas Flow Rectangular Type Feedwater Economizer**, sized to reduce the flue gas temperature exiting the boiler to 300° F including:
  - ASME Section I construction
  - 10 gauge carbon steel inner casing
  - mineral wool insulation and corrugated lagging
  - high-temperature paint on exposed carbon steel surfaces
  - 2" OD SA178A carbon steel tubes, 0.125" minimum wall
  - 0.06" thick x 0.75" high x 3 fins/inch, solid carbon steel fins
  - feedwater inlet and outlet connections
  - manual vent valve
  - manual drain valve
  - feedwater inlet and outlet temperature transmitters with RTD's
  - gas inlet and outlet temperature transmitters with RTD's
  - feedwater in and out pressure gauges
  - Four (4) Motorized Rotary Sootblower, utilizing a common local panel with the boiler sootblowers motor starters. Interconnecting piping and valves are included to bring the economizer sootblowers to a common terminal point.
  - flanged flue gas inlet and outlet connections
  - one (1) Interconnecting pipe between the boiler and the economizer

### Structural Support Steel, Item 351

The boiler system will include:

- **One (1) Lot of Structural Support Steel** to elevate the boiler and economizer to accommodate the bottom ash hoppers and ash handling equipment. The structural support steel will be shipped knocked down for field assembly.
- Structural support steel shall receive SSPC-SP3 surface preparation and one coat of oxide primer.





### Deaerator, Item 370

**One (1) Deaerator System.** Model Description: 100,000 lbs/hr packaged packed column type deaerator. The deaerator will be designed to operate at 8 psig and produce deaerated boiler feedwater with a maximum O<sub>2</sub> content of 0.007 ppm at a temperature of 235°F. The deaerator system will be fabricated in the USA or Canada. The deaerator system will include:

- Safety relief valve
- Make-up water control valve
- Condensate water control valve
- Steam inlet pressure control valve
- Temperature indicator
- Temperature transmitter
- Pressure indicator
- Pressure transmitter
- Valve with orifice for vent

Horizontal Storage Tank designed and built to meet the requirements of ASME Section VIII, Division 1 with a 10 minute storage capacity. The storage tank shell and heads will be constructed from SA-516-70 plate. Deaerator System Support Steel Structure. The storage tank will include the following accessories:

- Level gauge glass
- Level alarm switches
- Overflow control valve

### Feedwater Pumps, Item 371

Three (3) 50% horizontal, radially split, foot mounted multistage ring section pumps designed and built to meet the requirements of the Hydraulic Institute Standards and the ASME Code. The pumps will be fabricated in the USA.

Each pump will include:

- Motor drive for pump
- Inlet strainer
- Inlet pressure gauge
- Inlet isolation valve
- Discharge non-return valve
- Discharge pressure gauge
- Discharge isolation valve
- Automatic minimum flow recirculation valve
- Pump design is based on ISO 5199 – Technical specifications for centrifugal pumps, Class II.



## ASH HANDLING SYSTEM

### GRATE ASH TAKEOUT

#### Secondary ash screw, Items 422-428

Seven (7) Secondary ashing screws to be integrated to the combustion chamber. Complete with speed reducer and electric motor. Each screw is of a heavy-duty design with 5/16" flite thickness continuous welded on a schedule 80 pipe. Each screw discharge is equipped with an air lock.

#### Collecting ash screw, Item 429

One (1) Collecting ash screw to be integrated to the combustion chamber. Complete with speed reducer and electric motor. The screw is of a heavy-duty design with 5/16" flite thickness continuous welded on a schedule 80 pipe.

#### Ash collecting chain conveyor, Item 436

One wet (1) Ash collecting chain conveyor to receive the ash from the combustion chamber ash dump grate. The conveyor package is supplied complete with trough, chains and flites, bearings, conveyor supports and a complete drive assembly with electric motor. Water level control and make up water valve is included.

#### Ash transfer chain conveyor, Item 437

One (1) Ash transfer chain conveyor to receive the ash from the wet ash collecting chain conveyor. The conveyor package is supplied complete with trough, chains and flites, bearings, conveyor supports and a complete drive assembly with electric motor.

### FLY ASH TRANSFER, Dry Ash Handling

#### Rotary airlock (multicyclone), Item 446

One (1) Rotary airlock valve assembly to discharge the fly ash from the collection hopper under the multicyclone to the transfer screw. Complete with drive and electric motor.



### **Boiler Fly Ash Collection Hoppers**

Three (3) Boiler ash hoppers. These hoppers will be refractory lined (installation of refractory is to be done in the field by others). The refractory material is supplied. Installation of refractory is not included.

### **Fly ash screws, Item 451, 452 and 453**

Three (3) Fly ash transfer screws. Complete with drives and electric motors. These screws will transfer the flyash from the boiler and economizer ash hoppers to the flyash bunker.

### **Rotary airlock, Item 456, 457 and 458**

Three (3) Rotary airlock valve assemblies for discharging the flyash from the boiler hoppers. Complete with drive and electric motor.

### **Rotary airlock, Item 466 and 467**

Two (2) Rotary airlock valve assemblies for discharging the flyash from the economizer hoppers. Complete with drive and electric motor.

### **Fly ash collecting screws, Item 471 and 472**

Two (2) Fly ash collecting screws complete with drives and electric motors. These screws are located in the ESP ash hoppers. A common drive is included to drive the collecting screw and rotary airlock for each hopper.

### **Fly ash transfer conveyor, Item 473**

One (1) Fly ash transfer chain conveyor complete with trough, chains and flites, bearings, conveyor supports and a complete drive assembly with electric motor. This screw transfers flyash from the ESP to ash transfer screw 452.



## FLUE GAS HANDLING AND CLEANING SYSTEM

### Emission Control Equipment

#### Multi-cyclone assembly, Item 511

One (1) Fly ash collector of the multi-cyclone type with access doors, hood, and ash hopper. The 9" cones and inlet vanes are of cast iron for extended service life. Support for the flyash collector is included.

#### Electrostatic Precipitator, Item 513

One (1) modular electrostatic precipitator including all collecting plates, rigid discharge electrodes, roof sections, insulator compartments, access doors, all internal components and power supplies to make a complete air pollution control assembly. The ESP will be fabricated in the USA.

#### General system properties at the inlet to the system

Heat input (MMBTU/hr) .....	162.75
Flow (ACFM @ design temperature) .....	74,935
Flow (lbs/hr).....	224,100
H <sub>2</sub> O in flue gas (% by volume).....	22.2
CO <sub>2</sub> in flue gas (% by volume).....	10.8
O <sub>2</sub> in flue gas (% by volume) .....	4.6
Maximum O <sub>2</sub> in flue gas (% by volume).....	12
Temperature (° F).....	300
Basis of tons/yr calculations (hrs/yr) .....	8,760
Design operating pressure .....	Positive

#### Inlet loadings to the system

PM [lbs/mmbtu].....	0.332
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#### Guaranteed emission rates at the outlet of the system

PM [lbs/mmbtu].....	0.030
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#### Removal efficiencies of the system

PM (%) .....	91.0
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#### Miscellaneous items

Pollutant source .....	boiler
Fuel .....	wood waste
Expected power consumption (Kw) .....	27



Full load power consumption (Kw).....	57
Maximum operating duct pressure (inches-wc positive).....	2.0
Overall pressure drop (inches – wc).....	0.5
Expected overall temperature drop.....	-4.8

**Utilities Required**

**Particulate Removal**

Supply power voltage/frequency .....	460 / 3 phase / 60 Hz
Control voltage/frequency .....	115 / 1 phase / 60 Hz
Hopper heaters .....	460 / 1 phase / 60 Hz

The electrostatic precipitator will have the following design features:

Gas velocity (ft/sec).....	4.16
Treatment time (seconds).....	4.91
Treatment length (feet).....	20.4
Pressure drop (inches of w.c.).....	0.50
Structural design temperature (degrees F.).....	700
Structural design pressure (in. w.c.).....	+/- 35
Hopper capacity (cubic feet).....	840
Number of hoppers.....	2
Hopper opening size.....	18" x 6'-0"
Number of gas passages.....	11
Transformer output voltage (kv).....	55
Transformer output current (ma).....	300
Number of transformers.....	2

The collecting plates will be a new heavier constructed style from solid rolled steel sheets not less than 18 gauge. The sheets have a new more rigid box style stiffening fin and baffled to give quiet gas areas at the surface of the plate to minimize re-entrainment. Both top and bottom alignment guides, stiffeners and mountings will maintain the alignment of plates while permitting thermal expansion. The plates will be designed for a maximum temperature excursion to 700° F.

Electromagnetic uplift-gravity impact rappers will be provided. The rapping systems will be arranged to operate automatically and will be designed to minimize particulate re-entrainment. The rapper control will have adjustable frequency and intensity features.

Rigid electrodes will be provided and they will be fabricated from 16 gauge seamless tubing with uniformly spaced corona emitting pins welded to the tubing. The electrodes will be stabilized and supported to maintain alignment at all temperature ranges of the precipitator's operation.



Each discharge electrode frame will be vibrated individually and the system will be designed such that both duration and frequency of vibration can be varied.

Step up transformers/rectifiers will be provided with the precipitator. Each set will be an outdoor type, oil insulated, self-air cooled unit with full-wave rectifiers. The transformer and rectifiers will be in the same tank. The transformer will be provided with a grounding switch and a key interlock. Each set will be rated for temperature rise of 45 degrees C (at a maximum ambient of 50 degrees C).

The high tension support insulators will be of the cylindrical, compression load type. The insulators will be porcelain, glazed inside and outside and will have ground ends. The insulators will be located out of the gas treatment area, and will be kept clean by purge air.

The precipitator will be furnished with key type safety interlocks with a sequential key arrangement to prevent access to any high voltage equipment without locking out the power supply and grounding the high voltage equipment. The following equipment will be interlocked: all quick opening precipitator access doors, transformer/rectifier ground switches and high voltage control unit circuit breakers.

Welded weatherproof individual insulator compartments will be provided to house insulators. The insulator compartments will be accessible by access doors with safety interlocks to prevent access to all high voltage areas except until the precipitator is de-energized and grounded.

The electrostatic precipitator shell will be fabricated from 3/16" thick ASTM A-36 steel plate with external ASTM A-36 structural stiffeners as required to support the electrostatic precipitator internal pressure, wind, live, and dead loads. The shell will be seal welded to form a totally gas tight structure.

The precipitator will be equipped with transverse trough type hoppers. Each hopper will be fabricated from 3/16" ASTM A-36 steel plate, and supported with ASTM A-36 external structural shapes as required to support the hopper loads. Each hopper will be designed to support its weight when full of particulate. Particulate density is 65 lb/cu.ft. for structural sizing and 20 lb/cu.ft. for hopper capacity sizing. In addition, the hoppers will be of sufficient capacity to store particulate collected over a minimum period of 12 operating hours. The sides will be sloped to provide a minimum hopper wall angle of 60 degrees from the horizontal. The end angle will be adjusted to insure a minimum hopper valley angle of 55 degrees.



**PRECIPITATOR SUPPORTS:** The precipitator will include all structural steel with self-lubricating slide plates between the precipitator and support structure. The structural steel will be designed to provide for 8' - 0" clearance between the hopper discharge and grade.

**NOZZLES:** The precipitator will be equipped with flanged inlet and outlet nozzles. The nozzles will be fabricated from externally stiffened 3/16" thick ASTM A-36 steel plate.

**Inlet:** The inlet nozzle will be a horizontal entry pyramid type with the bottom angle of the nozzle 45 degrees from the horizontal. The inlet nozzle will include three flow distribution screens to assure uniform flow through the precipitator. No access is required.

**Outlet:** PPC will provide a vertical discharge "box" style outlet nozzle. The outlet nozzle will include a flow distribution device as required to assure uniform flow through the electrostatic precipitator. The nozzle will have a stub stack adapter for connection of the nozzle to the stub stack. No access is required.

**INSULATION & SIDING:** PPC will provide factory insulation of the electrostatic precipitator (including shell, hopper, inlet and outlet nozzles). The insulation will consist of 3" of 8# density mineral wool on all surfaces except the electrostatic precipitator roof. The precipitator roof will be insulated with 6" of 8# density mineral wool plus 2" fiberglass insulation over the stiffeners and then covered with 1/4" checkered plate.

The insulation on the inlet nozzle, outlet nozzle and electrostatic precipitator sides will be covered with 0.032" thick, unpainted, stucco embossed, Type 3003, 1 x 4 box ribbed aluminum sheeting or painted corrugated steel. The siding will run vertical and will be overlapped one section at all seams.

The insulation on the hoppers will be covered with 0.032" thick, unpainted, stucco embossed, Type 3003 1 x 4 box ribbed aluminum sheeting or painted corrugated steel. All flashing seams will be covered with flat material as well.

The siding material will be attached with TEK #4.5 12-24 x 1 1/4" Climaseal screws with neoprene washers. All sheet to sheet connections will be with 1/4 - 14 x 7/8" stitching screws with neoprene washers. All siding seams subject to moisture infiltration will be sealed with clear silicon sealant prior to assembly.

**PAINTING:** PPC will paint the structural supports, access, insulator compartments, handrails and roof exterior with one coat of red primer and



one coat of medium industrial gray enamel finish paint. All hot metal surfaces that will be exposed after the field insulation is completed will be painted with high temperature black paint. All ladders, platforms (including supports) and railings will be finish painted with safety yellow enamel.

**ELECTRICAL CONTROL EQUIPMENT:** The following electrical control equipment will be furnished by PPC.

**Precipitator Control/Distribution Panel:** An EEMAC 4 precipitator control/distribution enclosure will be mounted on the roof. This panel will house the main circuit breaker, distribution bus, individual circuit breakers and the required distribution wiring. The panel will also provide collecting plate rapper controls, discharge electrode vibrator controls and purge air blower controls.

**T/R Controller:** PPC will provide an EEMAC 4 microprocessor type high voltage control enclosure mounted on the side of each roof mounted transformer/rectifier. All components will be accessible through a hinged front door. The voltage controls will be completely automatic with auxiliary manual control. Both manual and automatic systems will provide full range control. Arc suppression will be provided by a current limiting device to reduce the voltage when a spark over condition exists in the precipitator. The controllers will be rated for a maximum ambient of 40°C. All enclosures will be constructed of 12 gauge steel and painted with ASA 61 gray enamel.

**Remote Control:** PPC will provide a remote graphics voltage controller (GVC) for each transformer/rectifier. Each GVC controller will be mounted in a remote control panel. The standard size of the remote panel for a two field electrostatic precipitator is 24" wide x 24" high x 8" deep. Three field electrostatic precipitators are six additional inches high. Other sizes may be required depending on the options selected.

The graphics controller provides bar graph and digital read outs of primary and secondary voltages and currents, as well as kW, spark rate and the status of the T/R. This remote panel is to be mounted in the customers control room. Alarms will be provided on the GVC control unit for AC overcurrent, T/R over temperature, SCR high temperature, loss of memory, DC undervoltage and DC overvoltage. A main menu is provided to select functions for operation and troubleshooting. The graphics controller display is 16 lines x 40 characters wide. The unit can produce V/I curves, 24 hour trend plots, and 30 minute trend plots. The operator can remotely set all precipitator parameters such as setback, rise rate, current limit, etc. On line help text is available for making all adjustments.

Each controller will also have three indicator lights next to each GVC. These lights are for Control On, HV On, and Alarm.





**SHOP INSTALLED ELECTRICAL:** PPC will mount the transformer/rectifiers and install the high voltage bus ducts and bus bars. PPC will provide conduit and will wire from the roof mounted control/distribution panel (PCDP) to the rappers, vibrators and blowers. PPC will mount all high voltage insulators, vibrator insulators and feed-thru insulators. PPC will provide and install terminal boxes at all field roof joints (customer required to make field terminations between field roof joints).

### WIRING

PPC utilizes the following wiring types for the following connections (PPC reserves the right to substitute XLPE wire in the applications below):

#### Conduit Wire

This wire is used between panels and roof junction boxes and between those junction boxes and termination conduit fittings for the rappers, blowers and vibrators. Conduits will be sized to a nominal 40% fill per N.E.C.

THHN / MTW / THWN-2 / T90 Copper Conductor

Engineering Specifications / Standards:

Underwriters Laboratories Standards UL-83, UL-1063, UL-758

AWM Spec 1316, 1317, 1318, 1319, 1320, 1321

ASTM Stranding Class B3, B8, B787

Federal Specification A-A-59544

Canadian Standards Association C22.2 No. 75

NEMA WC70/ICEA S-95-658

Institute of Electrical and Electronics Engineers

ARRA 2009; Section 1605 "Buy American" Compliant

Conductors: Stranded, uncoated copper conductors per ASTM-B3, ASTM-B787 and ASTM-B8

Insulation: Color-coded Polyvinyl Chloride (PVC), heat and moisture-resistant, flame-retardant compound per UL-1063 and UL-83

Jacket: A tough, polyamide, Nylon outer covering per UL-1063 and UL-83. Slick, Nylon outer jacket for easy pulling. VW-1 rated 14 AWG - 8 AWG. All sizes are rated gasoline and oil-resistant II.

Applications: Type THHN/THWN-2 building wire is intended for general purpose applications as defined by the National Electrical Code (NEC). Type THHN/THWN-2 is permitted for new construction or rewiring for 600-volt applications. Applications requiring Type THHN or THWN-2: the conductor is appropriate for use in wet or dry locations at temperatures not to exceed 90°C or not to exceed 75°C in oil or coolants. Applications requiring Type MTW: the conductor is appropriate for use in dry locations at 90°C, or not to exceed 60°C in wet locations or where exposed to oils or



coolants. Applications requiring Type AWM: the conductor is appropriate for use at temperatures to not exceed 105°C in dry locations.

### Vibration Isolation Wire

This wire is used between the termination conduit fittings and the rappers, blowers and vibrators.

SOOW / SJOOW 90°C Black ROHS

Engineering Specifications / Standards:

UL Standard 62

NEC Article 501.140 Class I Div. 2

NEC Article 400

CSA C22.2 No. 49

Passes CSA FT2 Flame Test

MSHA

EPA 40 CFR, Part 26, Subpart C, heavy metals per Table 1, TCLP method

Conductors: 18 AWG - 10 AWG Class K stranded bare copper per ASTM B-174

Insulation: EPDM

Jacket: CPE

Legend: SOOW E54864 (UL) 600V -40C TO 90C -- CSA LL39753 SOOW 600V -40C TO 90C FT2 Water Resistant P-07-KA070018-1-MSHA

Applications: Manufactured with advanced synthetic rubber compounds for operations at -40°C to 90°C with excellent resistance to flame, deformation, ozone, oils, acids and chemicals. SOOW has abrasion and oil resistant insulation and jacket. SOOW is flexible in cold temperatures and exceptional flexibility in normal conditions for motor leads, portable lights, battery chargers, portable stage lights and portable machinery. National Electric Code Article 400 applications.

### Panel Hook-Up Wire

This wire is used to connect the various components inside the panels (switches, lights, plc, blocks, fuses, terminals, etc.).

MIL-W-16878/2 Type C Wire (M16878/2 Wire) / Mil-DTL-16878/2

Engineering Specifications / Standards:

Passes UL VW-1 Flame Test

RoHS Hook-up Wire RoHS Compliant

MIL-W-16878/2 Type C Wire (M16878/2 Wire) Description:

Conductor: Tinned Copper, Solid or Stranded

Insulation: Polyvinylchloride (PVC), color-coded

Applications: The hook up wire passes the UL VW-1 Flame Test and is used across a broad range of industries requiring a high temp wire that can also



withstand harsh environments. Because of its size, non-flammable materials, and resistance to chemicals, typical uses for the MIL-Spec wire include harness applications for the military or aerospace industries. The wire may also be used for the internal wiring of electronic equipment. The wire has a temperature range of -55°C to +105°C (M16878/2 Type C) and 1000 volts. All types of the MIL Spec cable have an excellent temperature range and voltage rating. M16878E hook up wire applications include military harnessing, power supply lead wire, appliance wiring, and medical electronics. M16878EE may be applied for electronic use in protected applications where high temperatures are encountered and is a highly reliable OEM product. M16878ET is used in aerospace, industrial, military, and many other commercial markets.

#### Flue gas ducting, Item 521

One (1) Section of flue gas ducting as required between the boiler and the gas stack complete with temperature compensated connections. The flue gas ducting sections will be provided with cleanout doors.

#### Induced Draft Fan, Item 522

One (1) Induced draft fan of the industrial centrifugal type complete with heavy gauge metal housing, antifriction bearings, heavy-duty shafts and shaft cooler and balanced wheel with welded blades to wheel cone. The fan is designed with center hung wheel and direct drive for longevity and mounted on a concrete pedestal. The fan is supplied with housing cleanout door, drain and shaft guard.

#### Gas Stack, Item 523

One (1) stub stack will be provided for attachment to the outlet nozzle of the ESP. The stack discharge elevation will be approximately 100' above the grade level. The stack will be rolled from 1/4" thick ASTM A-36 steel plate to an inside diameter of 5'-0". The stack will be stiffened as required for wind loads. The stack will include 4" EPA test ports. A stack adapter will be provided for connecting the stack to the precipitator outlet nozzle. All external surfaces of the stack and the stack adapter will be painted with high temperature black paint.

One (1) Stack Testing Platform: permanent 270° testing platform (with hand railing) attached to the stack. Also, included is a caged ladder from the roof of the electrostatic precipitator to the platform. The platform will have galvanized grating. All access surfaces except the grating will be painted with one coat of primer and one coat of safety yellow enamel.



### Flue Gas Recirculation, Item 525

One (1) FGR system comprised of fan, damper and ducting to pull fluegases after the ID fan and bring them back to the combustion system and injected through strategically placed nozzles.

## ELECTRICAL SYSTEM

### Control Panel Assembly, Item 611

One (1) Control Panel Assembly with PLC enclosure to provide manual, automatic and modulating control of the system through a computer based interface. Adjustment of the modulating range (High Fire) and standby modes of operation will be dictated by steam demand. The control package will include:

NEMA 12, steel cabinet.

- Programmable controller complete with local and remote I/O racks, all necessary input and output modules.
- "Hand/Off/Auto" selection will be provided in the HMI to permit manual operation of various parts of the system for maintenance.
- Software is based on Microsoft Windows operating system.
- Software programming.

The control system will automatically increase or decrease the rate of fire in the combustor to satisfy the demand i.e. combustion air from the primary and secondary air fans as well as the fuel feed rate will be automatically adjusted in proportion with this demand.

One (1) O<sub>2</sub> Analyzer w/ transmitter for optimized combustion control and efficiency. Zirconium type direct insertion.

Zero speed switches for all conveyors except for the ash screws in the hoppers under the grates.

### PLC

The control system included in this proposal consists of an Allen Bradley Control Logix PLC. The PLC system will be programmed using RSLogix Software featuring advanced ladder and function block instruction set.



## HMI

The Human Machine Interface included in this proposal consists of one PC based workstation with two (2) monitors. The HMI will be programmed using Citect software.

## PLC Panel Design

All equipment will be designed, manufactured and tested in accordance with the applicable ANSI, EEMAC, and IEEE standards. All I/O points are wired to terminal blocks within the cabinets.

## Analog Programming Standards

Configuration block transfers to intelligent I/O modules will be done on power-up scan or operator initiated reset only. All analog inputs will be scaled on the I/O module and have an "out of range" alarm, indicating a problem with the signal from the field generated by the module. Validated data only will be transferred to the data file.

## Digital Programming Standards

Motor control bits will be sealed in by ladder logic, as opposed to using latching bits so that all outputs will be de-energized upon PLC power-up. File instruction generation will not be used for motor control.

Each motor will have a motor fault alarm. Control logic will be programmed in the order of material flow through the system.

## Documentation standards

The documentation provided is generated using the following software packages and will be supplied in their native format:

Word Processing	Manuals	Microsoft Word
Spreadsheet	Design Aids	Microsoft Excel
Database	Design Aids	Microsoft Access
Drafting	Drawings	Autocad 2014
PLC Programming	PLC documentation	RSLogix

## Media and Format

Final project documentation is supplied in both printed format and on optical disc. One (1) copies of all printed documents will be provided in durable binding suitable for use in a plant environment.



### Hardware Documentation

- PLC system configuration drawings
- PLC cabinet drawings showing the layout of all components in the cabinet.
- PLC control schematics showing the control power distribution within the cabinets.
- I/O termination detail (listing) showing the field device connections through the intermediate terminal blocks to the module-wiring arm.

### Computer Generated PLC Documentation

All I/O points, every internal bit and each internal storage word will have a unique description adequately describing the function of the entity.

All data files shall be named where they appear in block instructions.

- Rung comments will contain sufficient detail to explain program operation.
- Each program section will have long comments describing the operation of that section of program.
- Math formulas implemented in PLC logic will be fully documented within the comments.

Minimum program listings include the following:

- Annotated ladder logic complete with rung cross-reference.
- I/O points sorted by address.
- Bit and Word descriptions sorted by address.

### Manuals

The hardware manuals will contain the following:

- Manufacturer's specification sheets for all equipment used.
- Manufacturer's installation and maintenance manuals.
- Manufacturer's programming manuals for software based equipment.
- Software Diagrams
- Computer Generated PLC Documentation

### Motor Control Center, Item 629

Allen Bradley variable frequency drives are included for the following motors.

- Primary and Secondary air fans, ID fan and FGR fan
- Stoker Screws
- Feedwater pumps
- Cooling tower fans



## STEAM TURBINE & GENERATOR

### Steam Turbine and Generator Item 661

One (1) Buffalo Turbine Steam Generator and Turbine set. The turbine will be manufactured in Bangalore, India at the Chola Turbo Machinery facility. Buffalo Turbine is a subsidiary of Chola Turbo Machinery and is responsible for packaging the turbine with generator and auxiliary equipment. Chola Turbo Machinery Turbines are extensively proven and have been approved by General Electric.

### Condensing System

One Steam Condenser of Divided Water box design and non-contact surface type designed as per requirements of Heat Exchange Institute Standards for Steam Surface Condensers. Condenser shall be sized to condense the maximum quantity of steam as per performance data sheet. Cooling water temperature at the inlet has been considered as 77.2 °F and outlet water temperature as 91.6 °F. Condenser tube material shall be stainless steel.

### Alternator

One (1) WEG horizontal shaft three phase, alternating current, turbine driven, synchronous generator conforming to IEC 60034-1, class of insulation for Stator & Rotor 'F' and complete with all accessories such as Excitation Panel, Automatic Voltage Regulator.

### Synchronous Generator Technical data (preliminary)

kW:	8500
Volts:	12,470
RPM:	1800
kVA:	10000
Amps:	418
Hz:	60
Temp Rise:	80 °C
PF:	0.85
Phase:	3



## COOLING SYSTEM

### Cooling Tower Item 662

The cooling tower is designed to provide circulated cool water to the steam condenser and is sized for the maximum exhaust steam load. Made in the USA. The performance is as follows:

Maximum Heat load:	64,761,000 BTU/hr
Flow Rate:	8,982 USGPM
Supply Water Temperature:	91.60 °F
Return Water Temperature:	77.20 °F
Wet Bulb Temperature:	70.50 °F
Range:	14.40 °F
Evaporation:	130 usgpm
Makeup water requirement:	175 usgpm
Blowdown(estimated)	45 usgpm
Tower Design Excess Margin	8%

Four (4) Evapco AT 212-4L36 Cooling towers including:

- Thermal Performance certified by CTI in accordance with STD-201

Each cooling tower complete with:

- (2) 25 HP TEFC Premium efficient fan motor, 460/3/60
- G235 Galvanized steel construction
- EVAPAK Fill
- IBC Standard Structural Design
- Louver Access Door
- 304 Welded Stainless Steel Cold Water Basin
- 5 Year Mechanical drive parts warranty





Common circulating water filter: Orival ORG-080-LS Filter Complete with pump, or equal including:

- |                              |                           |
|------------------------------|---------------------------|
| • Screen Micron Size         | 200 Micron                |
| • Maximum Flow Rate          | 1320 GPM                  |
| • Maximum Working Pressure   | 150 PSIG                  |
| • Minimum Working Pressure   | 30 PSIG                   |
| • Maximum Temperature        | 150 F                     |
| • Inlet/Outlet Flanges       | 8" ANSI 150 #             |
| • Drain Valve Connection (1) | 1 ½" N.P.T.               |
| • Solids Loading             | 100 mg/l suspended solids |
| • Maximum Design Delta P     | 2 psig clean strainer     |
| • Controller (1)             | Omnitrol 401              |
| • Pump                       | 40 HP, 460v               |

#### Circulating Pumps Item 663

Three (3) pumps to circulate water between the steam condenser and the cooling tower. Two pumps operating and one pump spare. Scope includes:

- End suction single stage centrifugal pump
- Size : APT 52-16
- Casing Material: 53 / F0067 ASTM A48 CL35B - Cast Iron
- 100 HP Motor



## TECHNICAL SERVICES

### Engineering, Item 801

During the initial phase of the project, KMW will review with the Purchaser and its consulting engineers the overall aspects of the project, layout, and will proceed to develop a preliminary, confirming layout to allow the civil structural design work to begin as soon as possible. However, client's engineers must provide confirmation of site dimensions, elevations, interferences, etc. to allow KMW to proceed with final engineering.

We estimate that on this basis a General Arrangement Drawing of equipment arrangement could be provided approximately 21 days from the date of the review meeting or from the date KMW was provided with all necessary information by the Purchaser.

In order to issue Foundation Requirements Drawings in time and meet delivery schedules as specified, it is assumed that the approval of drawings by Purchaser will take no longer than ten working days. These drawings would constitute final anchoring dimensions, foundation outlines, embedment locations, load points, etc.

Three sets of drawings required for construction and installation purposes will be provided.

KMW reserves the right to change some of the specifications of the equipment proposed here pending more detailed engineering and final layouts. This does not apply to major parts of the supplied system.

KMW's engineering and project management staff will be available to the Purchaser and its engineers for proper coordination of project drawing requirements, delivery schedules, maintenance and operating manuals and startup services.

Prior to the start-up of the boiler, KMW will provide one (1) copy of the manual in the PDF format, which will include the following:

1. Instructions for Operation
2. Maintenance Instructions
3. Recommended Spare Parts List
4. Lubrication Instructions
5. Brochures on Equipment



## TECHNICAL ASSISTANCE

### General

KMW and our major equipment suppliers can provide technical assistance as outlined below. Please refer to Schedule 1 for KMW per diem rates. Major equipment supplier field service personnel will be available to the Purchaser at their standard rates.

### Installation Supervision

Technical assistance during Erection to ensure that all of KMW's equipment will be erected in the proper manner and within the projects schedule to be developed jointly between KMW and the Purchaser, or its engineers.

### Technical Assistant Commissioning and Startup

Technical assistance during Commissioning and Startup to assist in the following.

- Final equipment inspection.
- Check electrical and instrumentation hook-ups
- Dry run and checking that final adjustments are made.
- Firing-up, system testing.
- Intermediate load run.
- Design output and combustion efficiency testing (if No load demand restrictions occur).

Prior to and during the performing of the above tasks, the Purchaser shall provide the following:

1. Sufficient labour for operating the boiler system as required.
2. Sufficient fuel and boiler demand in that no restrictions for final adjustments will occur.



## PRELIMINARY MOTOR LIST

Item	No.	HP	Inst. HP	Oper. HP	Duty	Net HP
<b>Fuel handling</b>						
Unloading screws	2	7.5	15	6	75%	9.0
<b>Combustion Cell</b>						
Bin levelling screw	1	10	10	7	75%	5.3
Metering screw	4	1	4	0.75	100%	3.0
Primary fan	1	30	30	22	100%	22.0
Secondary fan	1	100	100	86	100%	86.0
HPU, grates	2	15	30	12	80%	19.2
HPU, grates	2	5	10	4	80%	6.4
Grate cooling pump, operating	1	3	3	2	100%	2.0
Grate cooling pump, standby	1	3	3	2	0%	0.0
<b>Ash handling</b>						
Secondary ash screws	7	1.5	10.5	0.7	20%	1.0
Collecting ash screw	1	1.5	1.5	1.2	20%	0.2
Grate ash transfer conveyor	2	3	6	2	20%	0.8
Flyash transfer screws	3	1.5	4.5	1	100%	3.0
<b>Gas Vent System</b>						
Flyash rotary airlock, multicyclone	1	1	1	0.75	100%	0.8
Flyash rotary airlock, boiler,eco hoppers	5	0.5	2.5	0.40	100%	2.0
Induced draft fan	1	300	300	210	100%	210.0
FGR fan	1	7.5	7.5	4	100%	4.0
<b>Boiler</b>						
Feedwater pump, operating	2	150	300	118	100%	236.0
Feedwater pump, standby	1	150	150	118	0%	0.0
Sootblowers, stationary	6	0.13	0.78	0.1	5%	0.0
Sootblowers, retractable	2	2	4	1.5	5%	0.2
<b>ElectroStatic Precipitator</b>						
Screw - airlock, ash hoppers	2	1.5	3	1	100%	2.0
ESP Flyash transfer conveyor	1	1	1	0.7	100%	0.7
Purge fan	1	0.5	0.5	0.4	0%	0.0
<b>Cooling System</b>						
Cooling tower - fans	8	25	200	22	100%	176.0
Cooling tower - circulating pump, operating	2	100	200	93	100%	186.0
Cooling tower - circulating pump, standby	1	100	100	93	0%	0.0
Cooling tower - circulating filter	1	40	40	35	100%	35.0
Total Installed	1538	HP		1132	kW	
Total net operating	1011	HP		744	kW	
ESP				57	kW	


**PERFORMANCE AND DESIGN CRITERIA, 8.5 MW**

Maximum Continuous Rating (MCR)	95,000	Lbs/hr
Operating steam flow – Maximum extraction	92,400	Lbs/hr
Operating steam flow – Average extraction	80,080	Lbs/hr
Heat Transfer Medium	Superheated Steam	
Operating Pressure	900	PSIG
Operating Steam Temperature	900	°F (+/- 10°F)
Feedwater Temperature	235	°F
Furnace Operating Temperature	1900-2000	°F
Flue Gas Temperature after Economizer	300	°F
Est. fuel consumption, (average steam flow) including 2% blowdown	33,677	Lb/hr as fired

Fuel Description	Hogged and screened wood fuel	
Fuel Density	20	Lb/ft <sup>3</sup> Approx.

<b>Fuel analysis (dry):</b>	
Carbon	55.21%
Hydrogen	6.39%
Oxygen	37.83%
Nitrogen	0.04%
Sulfur	0.02%
Ash	0.51%
Chlorine	<0.005%
Design Moisture, wet basis	49.8%
Higher Heating Value, Btu/ oven dry lb	8,516

**Fuel Size Characteristic**

Max Size	100% < 5"
	95% < 4"
	90% < 3"
Min Size	95% > 1/16"


**PERFORMANCE DATA, 8.5 MW**

<b>OPERATING CONDITIONS, Maximum Extraction</b>		<b>Units</b>		
Steam pressure		psig	900	
Steam temperature		deg.F	900	
Feedwater temperature		deg.F	235	
MCR boiler		lb/hr	92,400	
Enthalpy of steam		BTU/lb	1,454	
Enthalpy of feedwater		BTU/lb	203	
Boiler blowdown	2%	lb/hr	1,848	
Boiler feedwater		lb/hr	94,248	
Deaerator pressure	8 psig	deg.F	235	
Enthalpy of feedwater after deaerator		BTU/lb	203	
Condensate return	79%	deg.F	135	
Make-up water	21%	deg.F	60	
Condensate return to deaerator		deg.F	119	
Enthalpy of condensate return		BTU/lb	87	
Extraction steam for deaeration	60 psig	lb/hr	9,998	
Est. feedwater temp after economizer		deg.F	491	
Enthalpy of feedwater after economizer		BTU/lb	477	
<b>Total energy required</b>		BTU/hr	116,133,814	
Fluegas temperature after economizer		deg.F	300	
Stack gas temperature		deg.F	300	
Turbine condenser	2 in.Hg	deg.F	101	
<b>Fuel type</b>		Wood Biomass		
HHV of fuel at	0.0%	moisture	BTU/lb	8,516
HHV of fuel at	49.8%	moisture	BTU/lb	4,275
Excess air			39%	
Est. combustion temperature		deg.F	1,977	
Combustion temperature after FGR		deg.F	1,950	
<b>Efficiency based on HHV</b>				
System fuel input		BTU/lb	4,275	
Loss in dry products of combustion		BTU/lb	280	6.5%
Sensible heat loss		BTU/lb	88	2.1%
Latent heat loss H2O		BTU/lb	824	19.3%
Sum of stack losses		BTU/lb	1,192	27.9%
Heat loss due to dry gas		BTU/lb	280	6.5%
Heat loss due to moisture in fuel		BTU/lb	912	21.3%
Heat loss due to rad. & conv.		BTU/lb	35	0.8%
Heat loss due to incomplete combustion		BTU/lb	10	0.2%
Total losses		BTU/lb	1,237	28.9%



BIOMASS FIRED ENERGY SYSTEM, PROPOSAL 15025 REV.9  
 GEORGES RIVER ENERGY, LLC.

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Net output, efficiency			BTU/lb	3,038	71.1%
MFG margin					1%
Boiler efficiency			%	70.07%	
Required energy input			BTU/hr	163,406,745	
Quantity of fuel consumed, as fired			lb/hr	38,224	
			tons/day	459	
			kg/hr	17,335	
			tonnes/day	416	
Gas flow					
	Dry gas	192,603	lb/hr	41,206	scfm
		87,348	kg/hr	70,009	Nm3
	Total	225,027	lb/hr	52,957	scfm
		102,053	kg/hr	89,975	Nm3
Fluegas composition				Fuel composition	
		lbs/lb	wt %	Carbon	55.21%
	CO2	1.016	17.25%	Hydrogen	6.39%
	H2O	0.848	14.41%	Oxygen	37.83%
	SO2	0.000	0.00%	Nitrogen	0.04%
	O2	0.312	5.31%	Sulphur	0.02%
	N2	3.711	63.03%	Ash	0.51%
Fluegas emissions					
Flyash after multicyclone collector			0.332	lb/mmbtu	
Flyash after ESP			0.030	lb/mmbtu	
NOx as NO2			0.150	lb/mmbtu	
CO @ 3% O2			200	PPM	
Ash production					
Total ash		44	kg/hr	98	lb/hr
Bottom ash		35	kg/hr	78	lb/hr
Flyash		9	kg/hr	20	lb/hr
Combustion system design					
Moisture content, wet basis			design	50%	
Heat input			163,406,745	Btu/h	
Selected model			TRF-16	13/32	
Grate heat release			349,830	Btu/h,ft2	
Volumetric heat release			33,930	Btu/h,ft3	
Combustion air					
Total combustion air		42,442	scfm	72,109	m3/hr
Primary air		18,386	scfm	31,238	m3/hr
Secondary air		24,056	scfm	40,871	m3/hr
Grate cooling requirement					
Maximum heat rejection		2,540,000	Btu/h	744	kW



## PERFORMANCE AND DESIGN CRITERIA, TURBINE & GENERATOR

The steam turbine is a highly efficient design and will offer trouble free service over its life period. Other features of the turbine are:

- Turbine offered is rugged Base load Steam Turbine well suited to the specific applications.
- The Turbine is of slower speed design, reducing the possibility of rotor/blade failures.
- Steam trials are conducted in-house on all turbines before they are delivered to the customer, further ensuring high reliability.

**The Scope of the offer includes work related to the STG Set as follows:**

- Design Engineering.
- Material Procurement.
- Manufacturing and assembling.
- Inspection and Testing.
- Sea worthy packing.
- Transportation to the nearest port.
- Supervision of erection and commissioning at site.
- Training of Client's personnel at site/Vendor's shop.

The following sections describe the technical aspects of the offer.





### SCOPE OF SUPPLY

The scope of work for the turbo-generator package covered under this proposal shall include the following:

#### **I. MECHANICAL**

1. Condensing Multistage Steam Turbine
2. Emergency Stop Valve
3. Gland Sealing system with Gland steam condenser, exhauster etc.
4. Woodward Governor
5. Base Plate for mounting turbine & gearbox
6. Double Helical, Single Reduction gear box
7. High Speed & Low Speed Couplings with coupling guards
8. Complete Forced feed Lubrication System for cooling all bearings of Steam Turbine, Gearbox and Generator with gear shaft driven MOP, AC motor driven AOP, DC Motor driven EOP, Oil reservoir, Coolers, filters, piping, valves, Control Oil Pumps (1W + 1S), Oil purifier etc.
9. Turbine Safety Devices
10. Spool piece and expansion bellow as loose supply.
11. Special Tools & tackles

#### **II. ELECTRICAL**

1. A.C. Generator
  - a. 8500 kW, 12.47 kV, 60Hz, 0.85 pf, 1800 rpm Alternator
  - b. Brushless Excitation System
  - c. Automatic Voltage Regulator (Digital, 2A+2M)
2. Vacuum Circuit Breaker
3. Generator Protection Relay, Metering cum Synchronising Panel
4. NGR Panel
5. LASC PT Panel
6. MCC for turbine auxiliaries



7. Local Push Button Station
8. EOP Panel

### III. CONTROL & INSTRUMENTATION

1. Turbine Control Panel housing the following:
  - (A) Vibration Monitoring System
  - (B) Temperature Scanner for monitoring Bearing Metal Temperature
  - (C) Alarms Annunciations
  - (D) Primary Instruments for realizing Trips & Interlocks
2. Panel Mounted Items
3. Instruments Mounted on Local Gauge Board
4. Field Instruments
  - (A) Level Gauge
  - (B) Local Pressure Gauge
  - (C) Local Temperature Gauge
5. Control Valves
6. Solenoid Valve

### IV. SERVICES

1. Supervision of Erection & Commissioning:

Supervising engineers will be deputed to the project site for supervision of erection and commissioning work.
2. Training of operator's personnel:

Operation specialists will be deputed on site to train purchaser's operating staff. The details of training program will be discussed to meet the purchaser's requirements.



## MECHANICAL SCOPE

### 1. Steam Turbine

- Multistage, Nozzle governed horizontal spindle, axial flow, bladed design, controlled extraction cum condensing steam turbine complete with lagging and cladding.
- The machine is nozzle governed (multiple control valves) which ensures high efficiencies even at part loads.
- The rotor of the machine is of solid construction with disc supported between journal bearings for maximum stability. The rotor is supported on sleeve bearings and located by an antifriction tilting pad thrust bearing.
- The turbine casing is horizontally split for ease of maintenance, as there are the two separate bearings housings and packing boxes.
- Labyrinth Packing's to minimize steam leakage do the sealing of the steam. The labyrinths shall be of multi section spring backed type.
- Built-in Emergency trip valve.
- Complete Steam piping within the turbine skid.
- Start-up drains with pneumatically/manually operated shut-off valves shall be provided. Condensate traps for the drains shall be provided. Turbine drains piping up to one point at the base plate.
- Surface condenser with water conditions as per the BT HMBD.
- 1 No. each Isolation valve, QCNRV, Safety relief valve in the extraction line.

### 2. Emergency Stop Valve

- A hydraulic type quick closing automatic shut off valve is supplied mounted on the inlet steam chest. This valve stops the flow of steam in emergency thereby bringing the turbine to stop. It is provided with integral steam strainer.



### 3. Governing System

- Woodward make TG 17E actuator.
- Electronic Governor (**Woodward 505E**) to control the speed of the turbine at various loads.
- 2 Nos. Magnetic pick up units shall be provided.
- 1 No. MPU shall be provided for speed sensing and indication.

### 4. Base Plate

- The turbine and gearbox will be mounted on a fabricated common structural steel base plate.
- Necessary foundation bolts, shims, sole plate nuts etc. will be provided.

### 5. Gear Box

- Double helical, parallel shaft precision speed reduction gear sized to safely transmit the full turbine power. The unit is designed to run in one direction of rotation.
- The pinions are made of alloy steel; the tooth flanks are case hardened and ground with profile and longitudinal corrections. The gears are also made of alloy steel and are equipped with white-metal bearings.
- A.C. Motor driven Barring Gear System with automatic engagement and disengagement shall be provided.
- Gear shaft mounted Main Oil Pump shall be provided.

### 6. Couplings

- High speed flexible membrane type coupling between turbine and gearbox.
- Low speed flexible coupling between gearbox and generator.
- Coupling Guards.

### 7. Forced feed Lubrication System

A common lubrication system, which supplies oil at a correct flow and temperature to cool all bearings of turbine, generator and gearbox, comprising of:

- Gear shaft driven Main oil pump.
- Auxiliary oil pump (A.C. motor driven) with automatic switching.



- DC motor driven Emergency Oil Pump.
- Two nos. (1W + 1S) shell and tube type water-cooled oil coolers of sufficient capacity to cool required amount of oil at a desired temperature individually with gate valves. These are arranged in such a way that it is possible to clean one while other is in operation.
- One set of oil filters (1W + 1S) capable of filtering the oil up to 10/15 microns, fitted with gate valves. These are arranged in such a way that it is possible to clean one while other is in operation.
- Common Oil reservoir for lubrication & control oil system with cleaning doors.
- Locally mounted oil pressure and temperature gauges as required.
- Low lube oil pressure switch.
- Control Oil System shall consist of Two Nos. (1W+1S) AC Motor driven Control Oil Pump (A.C.) with automatic switching.
- One no. Oil Vapour Extractor fan with AC motor.
- Centrifugal type oil purifier with drives, interconnecting piping & valves. The capacity of the purifier shall be at least one (1) percent of the rate of normal flow through the reservoir.
- Electric heater mounted on the oil reservoir shall be provided if required for heating purpose to maintain the adequate temperature.
- Complete Lube oil & Control oil piping with the oil skid.

#### 8. Turbine Safety Devices:

- Over speed trip.
- Low lube oil pressure trip.
- Solenoid trip (Remote Operated).
- Manual trip knob on turbine.
- Axial movement trip.
- Low Condenser vacuum trip.
- High Bearing Temp. trip.
- Low control oil pressure trip.

#### 9. Condensing System

One Set Steam Condenser of Divided Water box design and non-contact surface type designed as per requirements of Heat Exchange Institute Standards for Steam Surface Condensers. Condenser shall be sized to condense the maximum quantity of steam as per performance data sheet. Cooling water temperature at the inlet has been considered as 77.2 OF and



outlet water temperature as 91.6 OF. Condenser tube material shall be stainless steel.

Condenser dimensions are selected so as to achieve effective steam distribution. The condenser proposed is with external hot well (bath tub design) with storage capacity between normal and Low level.

The condensing steam plant shall comprise of the following:

1. One (1) Shell and tube type, horizontal, surface condenser. The condenser shall be provided with integral hot well.
2. Two (2) Motor driven horizontal centrifugal pumps for extraction of condensate from the hot well of condenser.
3. One (1) Set of equipment for Extraction of non-condensable, dry air and water vapour from the condenser and comprising of the following:
  - 3.1 Set of ejectors (Twin element two stages).
  - 3.2 Set of coolers to condense the outlet of the ejector.
  - 3.3 Start - up ejector.
4. One (1) Level indicator and level controller.
5. One (1) Rupture Disc.
6. One (1) Set of piping along with pipe supports for the offered condensing system along with valves etc. Suitably pre-fabricated and supplied loose for the connection between the following:
  - 6.1 Turbine exhaust to condenser through stainless steel bellow MS spool piece.
  - 6.2 Condensate piping from hot well through pumps up to the battery limit in condensate circuit.
  - 6.3 Dry Air / Vapor line or instrument tubing within specified battery limits.

#### 10. Gland Steam Condenser:

- Consists of Steam Pressure regulator, Gland Steam Condenser and motor driven exhausters.



## GENERATOR & AUXILIARIES

### Alternator:

One (1) WEG horizontal shaft three phase, alternating current, turbine driven, synchronous generator conforming to IEC 60034-1, class of insulation for Stator & Rotor 'F' and complete with all accessories such as Excitation Panel, Automatic Voltage Regulator. The Generator shall be Closed Air Circuit Water cooled (IC81W) type, Enclosure IP 54. The alternator shall be fitted with a suitable number of RTDs per phase for indicating winding temperature, and space heater. The alternator shall be suitable for grid paralleling.

### Excitation System:

Brushless exciter will be provided mounted on the out board end of generator and will have IP - 54 enclosure. The excitation regulation system shall be of proven design.

### Automatic Voltage Regulator (ABB Make Unitrol 1020 (2A + 2M).

The Automatic Voltage Regulator offered shall be of Digital type complete with accessories mounted in suitable panel and capable of working over whole load & voltage range of Generator. This will be provided with two auto channel, and two manual channel, necessary meters and protective & control features.

The following meter of class 0.5 accuracy shall be provided.

- i) Exciter field current
- ii) Exciter field voltage
- iii) Generator voltage

Generator Incomer Panel Motorized draw out type Vacuum Circuit Breaker. The switchgear will be metal clad, self -supporting type for indoor installation, totally enclosed dust & vermin proof with draw out type Vacuum Circuit Breaker.



## 1. Generator Protection Relay, Metering cum Synchronizing Panel:

### A. Relay Panel:

- The generator protection relay is a Schweitzer SEL-700G1+ multifunction relay

### B. Metering Panel

- Ammeter - 3 Nos.
- Voltmeter with Selector Switch - 1 No.
- KW meter suitable for 3 phase 4 wire unbalanced load - 1 No.
- KWH meter suitable for 3 phase 4 wire unbalanced load - 1 No.
- Power Factor meter suitable for 3 phase 4 wire unbalanced load - 1 No.
- Frequency meter reed type - 1 No.
- KVA meter suitable for 3 phase 4 wire unbalanced load with maximum demand indicator - 1 No.
- KVAR Meter - 1 No.
- Trivector Meter - 1 No.

### C. Synchronizing panel:

For Synchronizing Double Voltmeter, Double Frequency Meter, Synchronoscope, Selector Switch, Check synchronizing Relay, auxiliary relay & necessary indicating lamps and Auto Synchronizer.

The Control Panel shall be complete with necessary indication lamps, Control Switches, semaphore indicators, & mimic diagram.



**D. Current Transformers & Potential Transformers:**

Current Transformers, Potential Transformers as required for metering and protections purposes are included.

Resin cast Current transformers for protection – Class PS, 5P20

Resin cast Current transformers for metering – Class 0.5

Three phase, Resin cast, Fixed type, Dual winding Potential transformers, Suitable for earthed system, Class 3P, Class 0.5.

**E. Indicating Lamps:**

- a. For breaker's ON/OFF/TRIP position.
- b. For incoming busbar alive (RYB).
- c. AC supply on.
- d. DC supply on.
- e. Generator Heater / On.
- f. Cubicle heater / On.

**F. Control Switches & Push Buttons:**

- a. Breaker –T-N-C
- b. Control Panel interior light with switch ON/OFF
- c. AC Supply ON/OFF
- d. DC Supply ON/OFF
- e. Generator Space Heater ON/OFF

**2. Neutral Grounding Resistance Panel for 12.47 kV, 20 Amps for 10 Sec.**

The resistors shall be stainless steel Grade 304, made up of unbreakable corrosion proof Grids & shall be rated at 20 Amps for 10 seconds with temperature rise not exceeding 325 °C over ambient temperature of 50°C.

The cubicle will be made from 2 mm thick sheet steel with separate termination chamber for Neutral & Grounding termination. The panel shall be complete with one 12.47 kV, SP Isolating switch with auxiliary contacts, space heater, and indicating lamps, requisite CTS etc.

**3. LASC PT Panel:**

This will be made from 2.5/3 mm thick sheet steel on angle Iron structure, free standing floor mounting type, complete with aluminum busbar for



incoming & outgoing. The Panel will be suitable for indoor installation conforming to IP 52 enclosure.

**4. Motor Control Centre for Turbine Auxiliaries:**

1 No. factory assembled, industrial floor mounting, totally enclosed non drawout cubicle type motor control centre for auxiliary AC drive motors of TG set with requisite spare feeders. The MCC will be complete with termination arrangements for terminating copper conductor cables.

**5. Local Push Button Station:**

One Lot of Local On/Off push button station.

**6. EOP Panel/DC Starter Panel:**

This will be made from 2.5/3 mm thick sheet steel an angle frame structure, free standing floor mounting type, complete with punched grid SS resistance for DC Motor starting in three steps. The panel will be suitable for indoor installation conforming to IP52 enclosure.

**CONTROL, INSTRUMENTS AND SUPERVISORY SYSTEM**

Operation of the complete unit are controlled from Turbine control panel with a PLC. Necessary signals for temperature scanner, alarms annunciation & trip interfaces are obtained from primary instruments installed at the relevant points of the equipment and pipe lines. Pressure gauges, temperature gauges & speed indicator are installed on the local gauge panel for local operation.

Signals to Customer DCS will be available from the control panel in the serial links utilizing Modbus protocol (RS 485) and 4-20mA hard wired signals for monitoring of analogue process parameters.

The transmitters shall be SMART type, HART protocol compatible type. Thermocouples are used for measuring steam line temperatures. RTDs are used for measuring bearings, oil line and other temperatures.

**1. Turbine Control Panel housing the following:**

**A. Vibration Monitoring System (Bentley Nevada/Shinkawa):**

- Turbine front Journal bearing.
- Turbine rear Journal bearing.



- Turbine rotor axial displacement.
- Gearbox pinion side Journal bearing.
- Gearbox gear side Journal bearing.
- Generator drive end bearing.
- Generator non-drive end bearing.

**B. Temperature scanner for monitoring bearing metal temperature:**

- Turbine front Journal bearing.
- Turbine rear Journal bearing.
- Turbine thrust bearing.
- Gearbox high speed side Journal bearing.
- Gearbox low speed side Journal bearing.
- Generator drive end bearing.
- Generator non-drive end bearing.
- Generator stator temperature.

**C. Process Indicators/Controllers:**

- Main Steam Pressure Indicators.
- Gland Sealing Steam Pressure Indicators.

**D. Alarm Annunciation:**

- |  |       |
|--|-------|
| • Inlet Steam Pressure   | Low.  |
| • Exhaust Steam Pressure   | High. |
| • Extraction Steam Pressure  | Low.  |
| • Lube Oil Header Pressure   | Low.  |
| • Control Oil Header Pressure  | Low.  |
| • Gland Steam Condenser Level  | High. |
| • Thrust wear trip Alarm   | High. |
| • Turbine Speed  | High. |
| • Common Alarm for High Temp. Of Turbine,<br>Gearbox, Generator Journal Bearings | High. |
| • Common Alarm for Generator windings Temp.                                      | High. |

**E. Primary Instruments for realizing Trips & Interlocks:**

- |  |               |
|--|---------------|
| • Exhaust Steam Pressure - High        | Turbine Trip. |
| • Exhaust Steam temperature – high     | Turbine Trip. |
| • Lube Oil Header Pressure - Low       | Turbine Trip. |
| • Turbine axial bearing position- High | Turbine Trip. |
| • Lubrication oil temperature – High   | Turbine Trip. |



- Control oil pressure - Low Turbine Trip.
- Turbine over Speed (Mechanical) Turbine Trip.
- Vibration – high Turbine Trip.
- Very High Temperature of Turbine, Gearbox, Turbine Trip.  
Generator Journal Bearing
- Condenser Hot-well level -High, Standby Pump Start.
- Condenser Discharge pressure low, Standby Pump Start.

## 2. Panel Mounted Items:

- Start/Stop Push Buttons and indication lamps for:
  - AOP Motor
  - EOP Motor
  - COP Motor
  - Vapour Extractor Motor
  - Actuator Motor
  - Oil Centrifuge Motor etc.
- Local / Remote selector switches.
- Annunciator P. B. – ACK, Test, Reset.
- Emergency Trip Push Buttons.
- Necessary Indicating Lamps, Push Buttons, Temperature scanner etc.

## 3. Instruments Mounted On Local Gauge Board:

- Main Steam Pressure.
- Main steam temperature.
- Extraction Steam Pressure.
- Extraction steam temperature.
- Nozzle chest steam pressure.
- Lube Oil Header Pressure.
- Control Oil Header Pressure.
- Turbine Speed Indicator.
- Exhaust steam pressure.
- Exhaust steam temperature.

## 4. Field Instruments:

### A. Level Gauges:

- Main Oil Tank.
- Hotwell.

### B. Local Pressure Gauges:



- Cooling Water Inlet to Oil Cooler.
- Cooling Water Outlet from Oil Cooler.
- Cooling Water Inlet to Air Coolers.
- Cooling Water Outlet from Air Cooler.
- Cooling Water Inlet to Surface Condenser.
- Cooling Water Outlet from Surface Condenser.
- Different Pressure across Lube Oil Filter.
- CEP – I Suction Pressure.
- CEP – II Suction Pressure.
- Condensate Pressure after gland steam condenser.

**C. Local Temperature Gauges:**

- Cooling Water Inlet to Surface Condenser.
- Cooling Water Outlet from Surface Condenser.
- Cooling Water Inlet to Air Coolers.
- Cooling Water Outlet from Air Coolers.
- Cooling Water Inlet to Oil Cooler.
- Cooling Water Outlet from Oil Cooler.
- Oil inlet to oil cooler.
- Oil Outlet from Oil Cooler.
- Gland Steam Header Temperature.
- Condensate Temp. at inlet of Ejector Cooler.
- Condensate Temp. at Outlet of Ejector Cooler.
- Condensate Temp. after Gland Steam Condenser.

**5. Control Valves:**

- From Gland Steam Condenser outlet to Deaerator.
- From Gland Steam Condenser outlet to Condenser.

**6. Solenoid Valve:**

- For Remote Trip of Turbine.

**7. List of Tools & Tackles:**

SL. No	ITEM	QTY.
1	Spanner for Coupling	1
2	Spanner	1
3	Hook Spanner 100	1
4	Pin Spanner	2
5	Single end Ring Spanners	1 set
6	Single end Open Jaw Spanners	1 set
7	Double end Box Spanners	2
8	Allen Keys	2
9	Eye Bolts	6
10	Angle Screw Driver	5
11	Engineer Screw Driver	1
12	Cutting Pliers	3
13	Solid Single end Box Spanner	1



### COMMISSIONING SPARES

S. No.	Item	Qty.
1	Lube Oil Filter Element	2 Nos.
2	C.O. Filter Element	2 Nos.
3	Inlet Steam Pressure Gauge 6" dial	1 No.
4	Thrust pads	1 Set
5	Thermometer/ Temperature Gauge	4 Nos.
6	Spring for Pressure Valve of MOP & AOP	2 Nos.
7	Spare rotor – no charge	1 Nos.

### TWO YEAR OPERATION & MAINTENANCE SPARES

#### A. STEAM TURBINE

SL. No.	Description	Qty
1	Oil Inlet Fitting	1 No.
2	Rotor Journal Bearing	1 No.
3	Leaf Spring	1 Set
4	L.O. Trip Spring	1 No.
5	Trip Catch Spring	1 No.
6	Set of 'O' Rings	1 No.
7	Solenoid Valve	1 No.
8	Gasket for E.S.V.	1 No.
9	Over speed Trip Cap	1 No.
10	Over speed Trip Spring	1 No.
11	Rod End Bearing	1 Set
12	Thrust Pads	1 Set
13	Probe for Speed Indicator	1 No.
14	Catch Trip	1 No.
15	LP Trip Spring	1 No.
16	H.S. Coupling Shims	1 Set



**B. GENERATOR**

SL. NO.	DESCRIPTION	QUANTITY
1	Shaft earthing brush	2 No.
2	Shaft earthing brush holder	2 No.
3	Slip ring brush	1 No.
4	Slip ring brush holder	1 No.
5	Sponge adhesive gasket for cooler	10 mts
6	Air temperature detector	1 No.
7	Bearing temperature detector	1 No.
8	Pressure gauge for lube oil	1 No.
9	Labyrinth seal for DE side	1 No.
10	Labyrinth seal for NDE side	1 No.

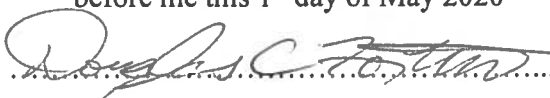
**UTILITIES TO BE PROVIDED BY THE PURCHASER**

- Auxiliary Power
  - 460 V AC : Motor terminals.
  - 110 V DC : Inlet terminal of our panels,
  - 220 V AC : UPS, TCP etc.
  - 220 V AC : Inlet terminal of our panels.
  
- Instrument cables: At the JB's.
  
- Instrument & service air: One connection at service and instrument air header within TG hall.
  - Minimum – 5 kg/cm<sup>2</sup>(g)
  - Normal – 6 kg/cm<sup>2</sup>(g)
  - Maximum – 7 kg/cm<sup>2</sup>(g)
  - Consumption - 5scfm (nominal)



**TAB B**

This is **Exhibit "B"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020



Notary Public  
Commission expires:

DOUGLAS C. FORTIN NOTARY PUBLIC STATE OF MAINE MY COMMISSION EXPIRES 10-24-24
--

**PERFORMANCE BOND  
FOR PROCUREMENT CONTRACTS**

Any singular reference to Seller, Surety, Buyer, or other party shall be considered plural where applicable.

SELLER (Name and Address):

**KMW Energy Inc.  
635 Wilton Grove Road  
London, ON N6N 1N7, Canada**

SURETY (Name and Address of Principal  
Place of Business):

**Liberty Mutual Insurance Company  
181 Bay Street, Suite 1000  
Toronto, ON M5J 2T3**

BUYER (Name and Address):

**Georges River Energy, LLC  
P.O. Box 9, 53 Ghent Road  
Searsmont, ME 04973, USA**

**CONTRACT**

Date: **December 6, 2016**

Amount: **\$12,825,000.00**

Description (Name and Location): **Proposal No. 15025, 8.5 MW Biomass Fired CHP System  
53 Ghent Road, Searsmont Maine 04973**

**BOND**

Date (Not earlier than Contract Date): **December 13, 2016**

Bond Number: **BDTO-150002-016**

Amount: **\$6,412,500.00**

Modifications to this Bond Form: **N/A**

Surety and Seller, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

**Seller as Principal**

Company: **KMW Energy Inc.**

(Corp. Seal)

Signature:

Name and Title:

*Eric Aiken, CEO*

**Surety**

Company: **Liberty Mutual Insurance Company**

(Corp. Seal)

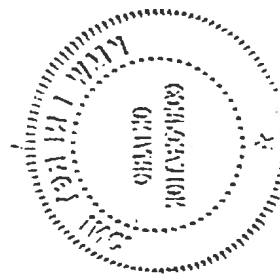
Signature:

Name and Title: **Emily Simas, Attorney-in-fact  
(Attach Power of Attorney)**

Address: **181 Bay Street, Suite 1000  
Toronto, ON M5J 2T3**

Telephone Number: **416-307-4682**

(Space is provided below for signatures of additional parties, if required.)



**Seller as Principal**

Company: (Corp. Seal)

Signature:  
Name and Title:**Surety**

Company: (Corp. Seal)

Signature:  
Name and Title:  
Address:  
Telephone Number:

1. Seller and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to Buyer for the performance of the Contract, which is incorporated herein by reference. For purposes of this bond, Buyer means Buyer's assigns, if and when Buyer has assigned the Contract.
2. If Seller performs the Contract, Surety and Seller have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
3. If there is no Buyer Default, Surety's obligation under this Bond shall arise after:
  - 3.1. Buyer has notified Seller and Surety pursuant to Paragraph 10 that Buyer is considering declaring a Seller Default and has requested and attempted to arrange a conference with Seller and Surety to be held not later than 7 days after receipt of such notice to discuss methods of performing the Contract. (If Buyer, Seller, and Surety agree, Seller shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Buyer's right, if any, subsequently to declare a Seller Default); and
  - 3.2. Buyer has declared a Seller Default and formally terminated Seller's right to complete the Contract. Such Seller Default shall not be declared earlier than 14 days after Seller and Surety have received notice as provided in Paragraph 3.1; and
  - 3.3. Buyer has agreed to pay the Balance of the Contract Price to:
    - a. Surety in accordance with the terms of the Contract;
    - b. Another seller selected pursuant to Paragraph 4.3 to perform the Contract.
4. When Buyer has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:
  - 4.1. Arrange for Seller, with consent of Buyer, to perform and complete the Contract; or
  - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
  - 4.3. Obtain bids or negotiated proposals from qualified sellers acceptable to Buyer for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Buyer and a seller selected with Buyer's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and

pay to Buyer the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Buyer resulting from Seller Default; or

- 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new seller, and with reasonable promptness under the circumstances, either:
  - a. determine the amount for which it may be liable to Buyer and, as soon as practicable after the amount is determined, tender payment therefor to Buyer; or
  - b. deny liability in whole or in part and notify Buyer citing reasons therefor.
5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Buyer to Surety demanding that Surety perform its obligations under this Bond, and Buyer shall be entitled to enforce any remedy available to Buyer. If Surety proceeds as provided in paragraph 4.4, and Buyer refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Buyer shall be entitled to enforce any remedy available to Buyer.
6. After Buyer has terminated Seller's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3, then the responsibilities of Surety to Buyer shall not be greater than those of Seller under the Contract, and the responsibilities of Buyer to Surety shall not be greater than those of Buyer under the Contract. To a limit of the amount of this Bond, but subject to commitment by Buyer of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
  - 6.1. the responsibilities of Seller for correction or replacement of defective Goods and Special Services and completion of the Contract;
  - 6.2. Additional legal, design professional, and delay costs resulting from Seller's Default, and resulting from the actions of or failure to act of Surety under Paragraph 4; and
  - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Seller.
7. Surety shall not be liable to Buyer or others for obligations of Seller that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Buyer or its heirs, executors, administrators, successors, or assigns.
8. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location of the Point of Destination, and shall be instituted within two years after Seller Default or within four years after Seller has delivered the Goods required by the contract or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Buyer or Seller shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Point of Destination, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1. *Balance of the Contract Price*: The total amount payable by Buyer to Seller under the Contract after all proper adjustments have been made, including allowance to Seller of any amounts received or to be received by Buyer in settlement of insurance or other Claims for damages to which Seller is entitled, reduced by all valid and proper payments made to or on behalf of Seller under the Contract.

12.2. *Contract*: The agreement between Buyer and Seller identified on the signature page, including all Contract Documents and changes thereto.

12.3. *Seller Default*: Failure of Seller, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. *Buyer Default*: Failure of Buyer, which has neither been remedied nor waived, to pay Seller as required by the Contract or to perform and complete or comply with the other terms thereof.



LIBERTY MUTUAL INSURANCE COMPANY  
181 Bay Street, Suite 1000, Brookfield Place, Toronto, Ontario M5J 2T3

---

## Power of Attorney

Number: 0004 – Amendment No. 3

Seal # 002

---

KNOW ALL PERSONS BY THESE PRESENTS that Liberty Mutual Insurance Company (the 'Company') does hereby name, constitute and appoint:

Wendy Findlay  
Louise Keck  
K. Bart Porter  
Scott Robinson  
Michael Schepers  
Emily Simas  
Jon Tondeur


,each individually (if there be more than one person named), its true and lawful attorney to make, execute, seal, acknowledge and deliver for and on its behalf as surety and as its act and deed, any and all bid bonds, consents of surety, performance bonds, labour and material payment bonds, maintenance bonds, commercial surety bonds and other surety obligations which, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the President and attested by the Secretary of the Company.

Provided, however, that this power of attorney may be revoked by the Company at any time and for any reason upon notice to the attorney.

Provided, further, that this power of attorney supersedes and replaces all previous versions of Power of Attorney Number 0004.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed to by an authorized officer or official of the Company and the corporate seal of the Company has been affixed hereto in the City of Toronto, Ontario, Canada this 2nd day June 2014.

Liberty Mutual Insurance Company

By:   
Paul McIntyre  
AVP, Canadian Surety



LIBERTY MUTUAL INSURANCE COMPANY  
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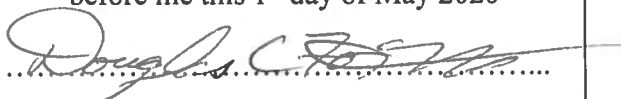
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before me this 1<sup>st</sup> day of May 2020



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Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24



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# Report to GRE Energy Robbins Unit 1 HP Turbine Evaluation of Chola Turbine Manufacturing, Operation and Design



Job#: 0512043-1-1

5-2-2019

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## Introduction

This report was prepared by Mechanical Dynamics and Analysis, Ltd (“MDA”) under contract with Georges River Energy, LLC (“GRE”). MDA was requested by GRE to document ongoing design, maintenance and operational problems with the steam turbine purchased from KMW Energy, Inc. (“KMW”) under the December 6, 2016 procurement contract between KMW and GRE (the “KMW Contract”). The steam turbine was manufactured for KMW by Chola Turbo Machinery International (“Chola”).

The steam turbine was provided by KMW as part of a turnkey 8.5 MW cogeneration energy system designed to sell power, provide steam to operate the lumber kilns at the mill, and provide steam heat to the mill. The power is to be sold to Central Maine Power under the terms of a 20 year Community Based Renewable Energy Project Power Purchase Agreement, dated September 22, 2016 (the “PPA”).

This report is based on the following: (1) a review of the KMW Contract including the proposal from KMW incorporated into that contract; (2) a review of the drawings and specifications for the steam turbine provided by GRE; (3) performance data supplied by GRE; (4) the material tests identified below; and (5) personal observations of the steam turbine at the GRE facility in Searsmont, Maine on March 12, 2019.

## Executive Summary

GRE contracted with KMW to provide an efficient steam turbine to meet its needs and keep operating costs down. To date the steam turbine has not operated at full power for more than several minutes to determine its maximum MW output. The time duration was too short to collect steady data to measure actual efficiency, but preliminary data at partial loads shows a much higher energy input is needed per a unit of output, than specified. As KMW and Chola continue to search for solutions to the known problems for which they are solely responsible, the steam turbine’s ultimate operational status is unknown. The following conclusions are based on the information identified in this report and are subject to change as KMW and its steam turbine supplier, Chola, make changes and more information becomes available.

For the reasons explained below, the steam turbine supplied by KMW does not comply with the requirements of the KMW Contract. It does not comply with the industry standards or the performance requirements identified in the KMW Contract. Its operation to date has been unreliable and neither KMW nor Chola have been able to fix this problem. Therefore, the steam turbine is not acceptable and should be replaced with a properly manufactured steam turbine that conforms to the requirements of the KMW Contract.

## Contract Requirements and Applicable Standards

### A. General Requirements:

The KMW Contract required KMW to design and supply an energy system capable of providing a variable amount of steam to be extracted from the steam turbine to provide steam heat for the mill and steam for the wood kilns used to dry the lumber while simultaneously producing electricity at the 7.5 MW net output power rating to enable GRE to sell electrical power to Central Maine Power under the terms of the PPA.

Consistent with this objective, the KMW Contract included KMW's 76 page Proposal No. 15025 Rev. 9 ("KMW Proposal") in which KMW promised that:

"The steam turbine is a highly efficient design and will off trouble free service over its life period. Other features of the turbine are":<sup>1</sup>

- "Turbine offered is a rugged Based load Steam Turbine well suited to the specific applications."

MDA Comment: *The KMW supplied steam turbine is not well suited for the needed operating requirements. It was not fabricated from cast materials that are strong enough at the design operating steam conditions. This is unsafe and unreliable.*

- "The turbine of slower speed design reducing the possibility of rotor/blade failures."

MDA Comment: *-This is meaningless as higher speed turbines are more efficient and are made from materials that are suited for operating conditions.*

- "Steam trials are conducted in-house on all turbines before they are delivered to the customer, further ensuring high reliability."

MDA Comment: *-The only trial was operation of the steam turbine with very little steam flow. It verified that the rotor could operate at design speed. Since there was no operating load on the equipment, it could not simulate actual operating stresses.*

"The Scope of the offer includes the work related to the STG Set as follows:"

- Design Engineering

MDA Comment: *The engineering was substandard compared to industry standard.*

- Material Procurement

MDA Comment: *The materials used for main steam turbine pressure parts are not made to industry standard alloys for the operating temperatures and service type. Materials not suited for high temperature service were provided and are potentially dangerous to operating personnel per the results of chemical testing and hardness analysis performed by the St. Louis Testing Laboratory.*

- Manufacturing and assembling

MDA Comment: *The manufacturing was substandard and potentially dangerous to operating personnel.*

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<sup>1</sup> KMW Proposal at p. 43.



- Inspection and Testing

MDA Comment: *Normal manufacturing quality control processes were not followed as critical components were not made from materials that are rated for the operating temperatures they are subjected to.*

“Mechanical Scope -- Steam Turbine”

- Labyrinth Packing’s to minimize steam leakage do the sealing of the steam. The labyrinths shall be of multisection spring backed type.<sup>2</sup>

MDA Comment: *The LP gland design is not “spring backed type”. This reduced seal effectiveness for life of turbine. The LP gland seals are critical to control air in leakage to the condenser as air leakage reduces efficiency. Spring backed designs are also more costly to manufacture.*

## B. Specific Industry Standards Applicable to the Steam Turbine

The KMW Proposal states that “*The equipment and materials shall comply with all applicable National Codes, Standards and Regulations*”.<sup>3</sup> The design, manufacture and operation of steam turbines in North America and most of the industrialized parts of the world are covered by various Standards and Codes to ensure fitness for duty and safety to operating personnel. In North America, the applicable Standards and Codes are:

- **American Society for Mechanical Engineers-ASME** –Covers Design and Manufacture of Pressure Vessels and Piping.

MDA Comment: *None of the Pressure Vessel parts were stamped with ASME symbols or properly tested. Hot steam flanges not made to ASME or API designs.*

- **American Society for Testing and Materials-ASTM**-Covers metal alloys and processing to ensure minimum standards. Specific ones for critical steam turbine components.

MDA Comment: *None of the critical pressure piping, castings, bolting, or drawings note ASTM classification. Material testing on some critical steam pressure parts confirmed that none were made to proper materials and thicknesses. Their construction does not meet minimum legal standards for use in the USA. Most likely, not insurable per Factory Mutual requirements.*

- **American Welding Society-AWS**-Covers welding of piping and fabricated parts.

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<sup>2</sup> KMW Proposal at p. 46

<sup>3</sup> KMW Proposal at p. 7

- **Factory Mutual-Insurance Company** that provides coverage on energy equipment. They set minimum standards for equipment supply and erection.
- **American Petroleum Industry-API**

*MDA Comment: The API provides requirements for design and construction as well as operating guidelines for steam turbines under Section 611. There were no API symbols on any parts or in the incomplete user's manual that we have to date.*

**MDA General Comment:** *There are no written or material test results that prove that any of these were complied with during the design, manufacture or erection of the subject KMW supplied steam turbine.*

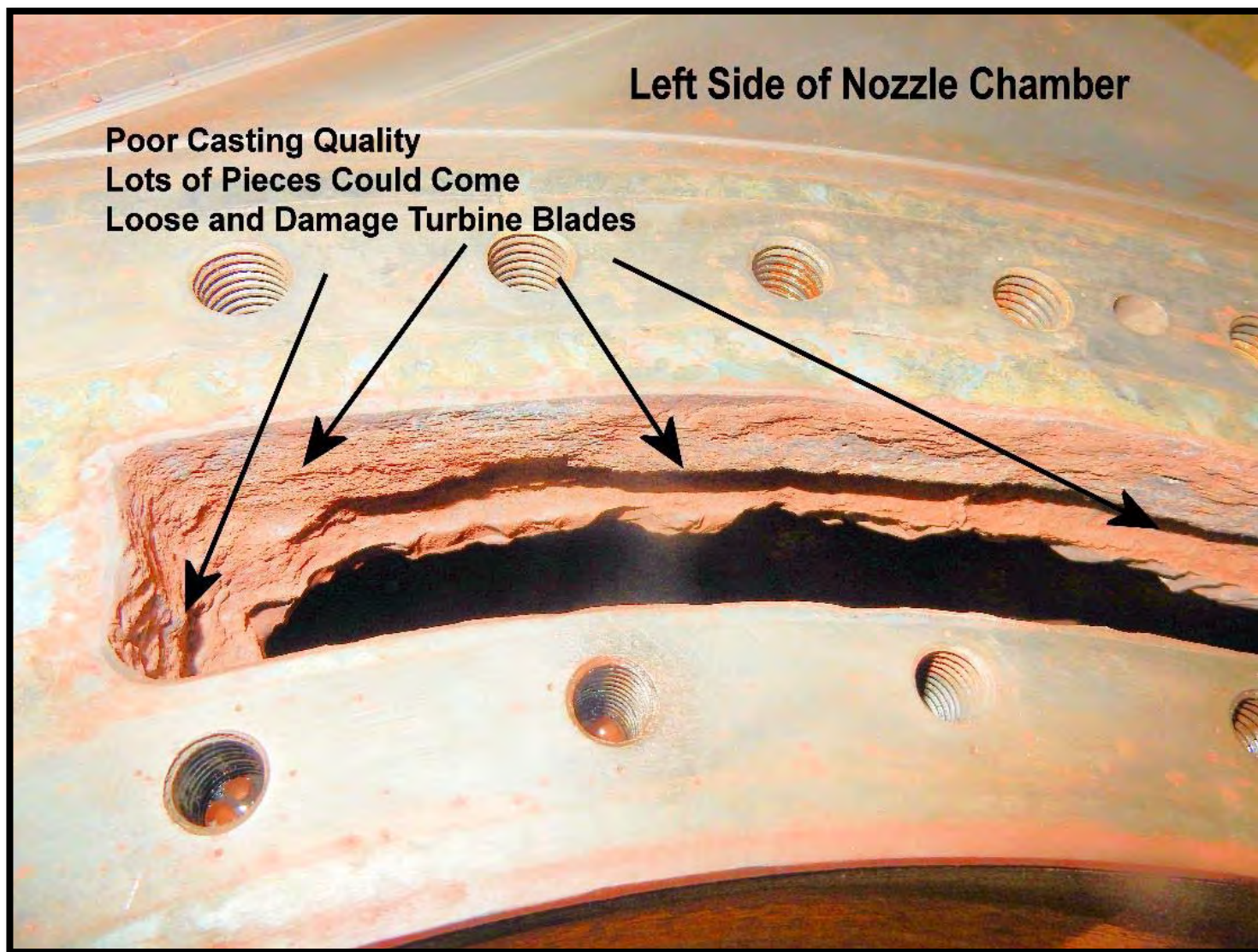
## **Manufacturing Quality**

The quality control program at the manufacturing level failed to assure the turbine complied with the accepted industry standards or the specified design specifications. The following photographs were taken at the GRE site in March 2019. The turbine was dismantled by KMW's subcontractors, to determine potential sources for internal steam leakage. As shown below, many components were found to be substandard with respect to their manufacture and assembly. This is just a partial listing of items.

**Right Side Nozzle Chamber After Stoning -- Surface Quality on Needed Metal to Metal Sealing Face.**

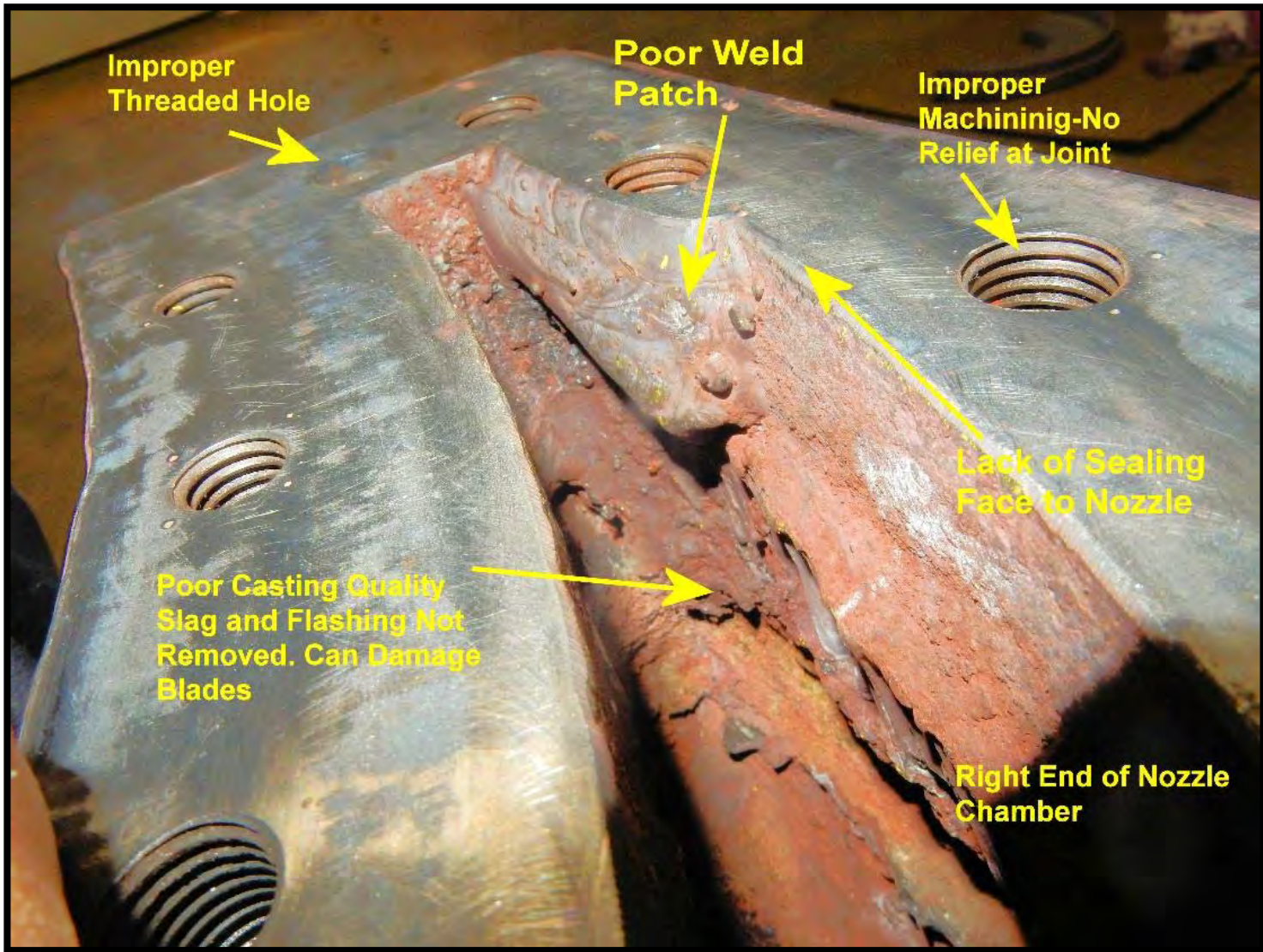


The surface was cleaned by stoning to see if sealing surface was properly machined and ground flat. It obviously wasn't. Steam leaks during operations. The nozzle plate could not seal against the nozzle chamber and the HP inlet steam pressure was bypassing the nozzle plate and over-pressurizing the HP gland seal. This over-pressured HP inlet steam then overheated the HP bearing area and then overheated the thrust bearing.

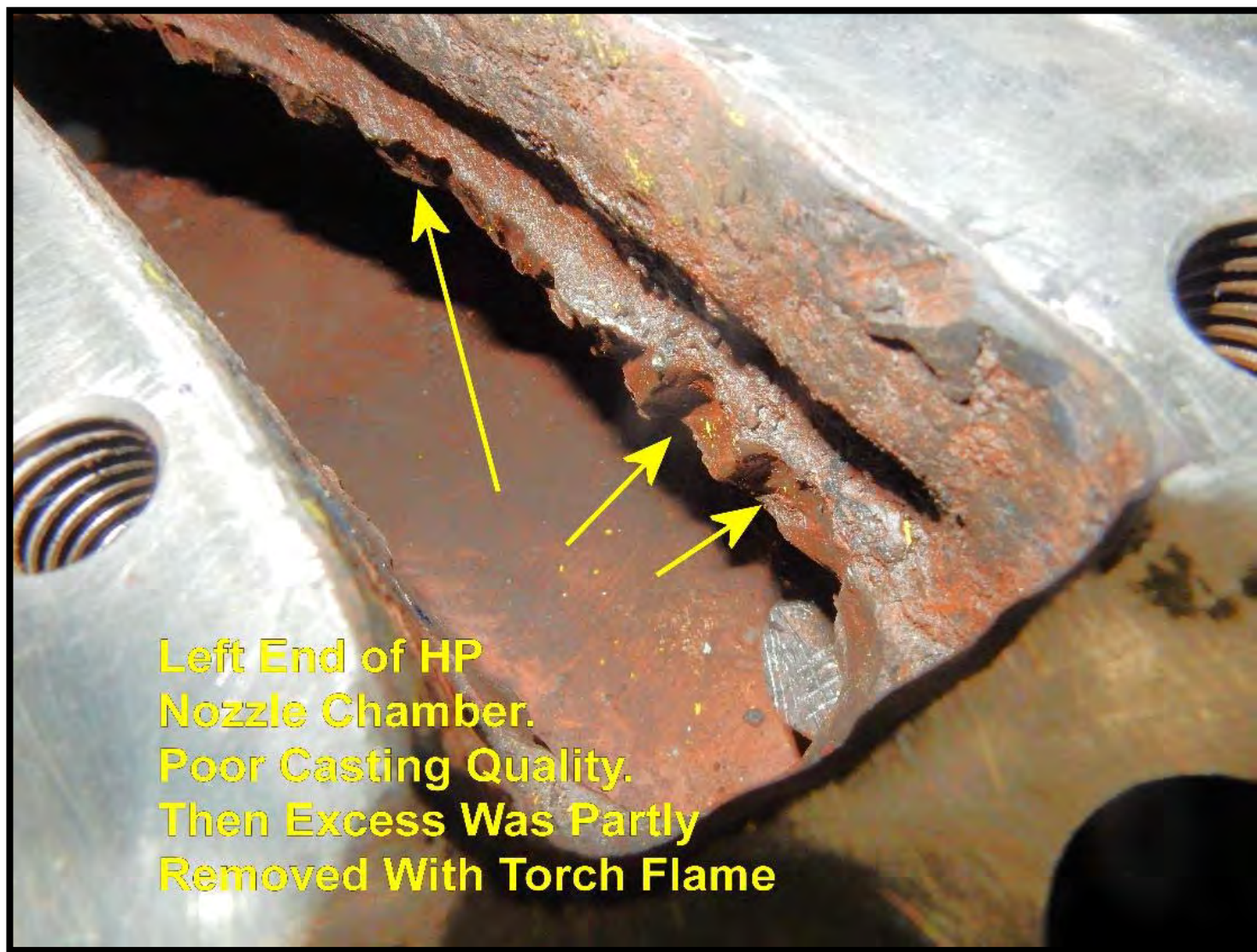
**Top Left Side of HP Nozzle Chamber Casting.**

Quality is Not Acceptable. Pieces Have Likely Broken off During Brief Service and Damaged Blades and Nozzle. Never Seen Such Poor Quality in 43 Years of Steam Turbine Career.



**Right Side of HP Nozzle Chamber Casting and Repairs Made by Chola.**

Poor Casting- Pieces Have Come Loose. Lack of Sealing Surface Contact With Nozzle Block, Improper Bolt Thread Design and Patch Weld.

**Left End of HP Nozzle Chamber.**

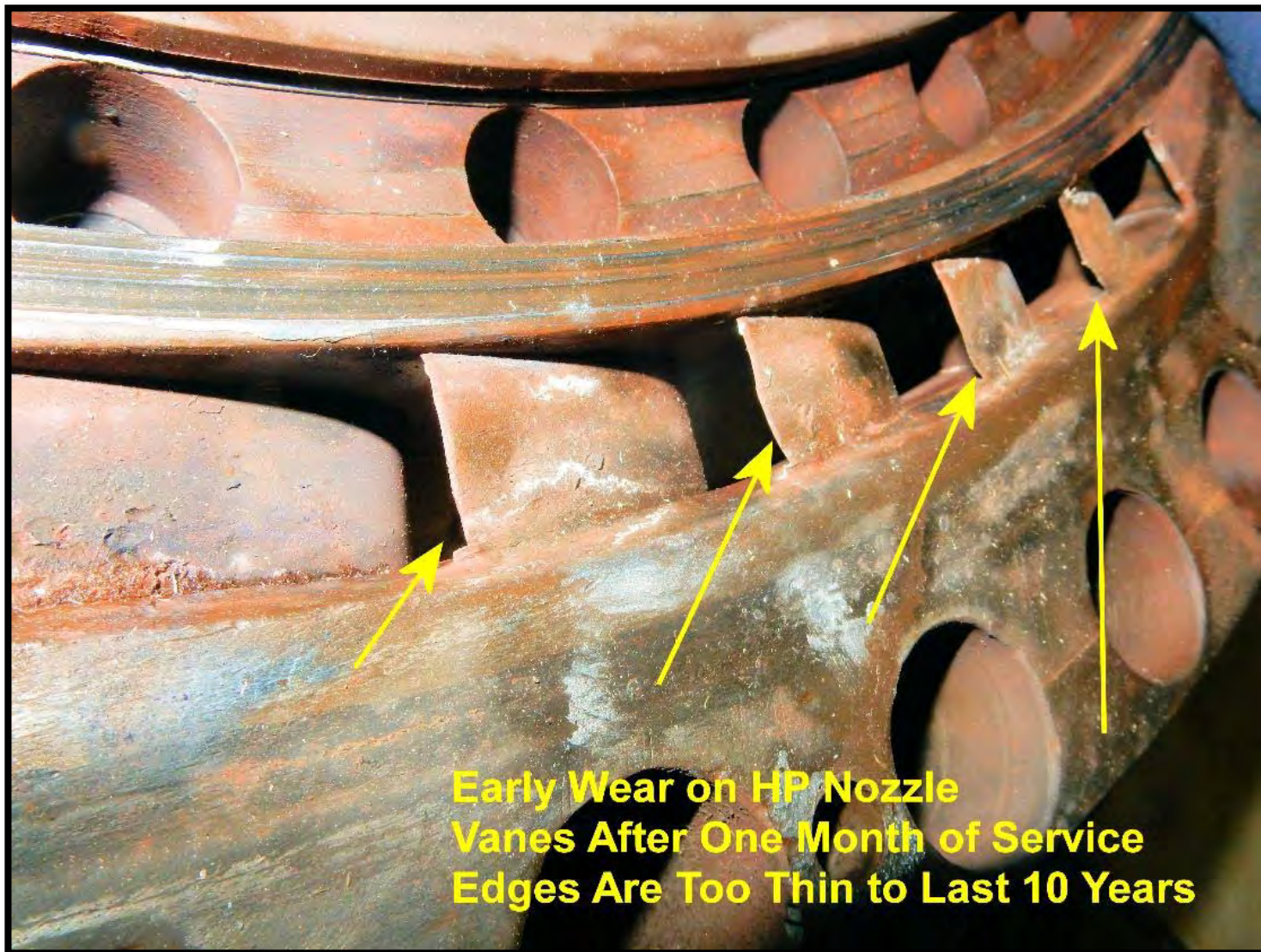
Poor Casting Quality and Improper Clean Up by Chola.



**Lower Left Nozzle Chamber.**

Piece of casting slag was knocked loose from inside steam flow area.

Discharge side view of HP nozzle block.



The HP Inlet steam flow exits thru these openings. The edges of the openings have severely eroded from such a short period of operation. Nozzle block is made from material that is too weak to operate with high temperature steam.



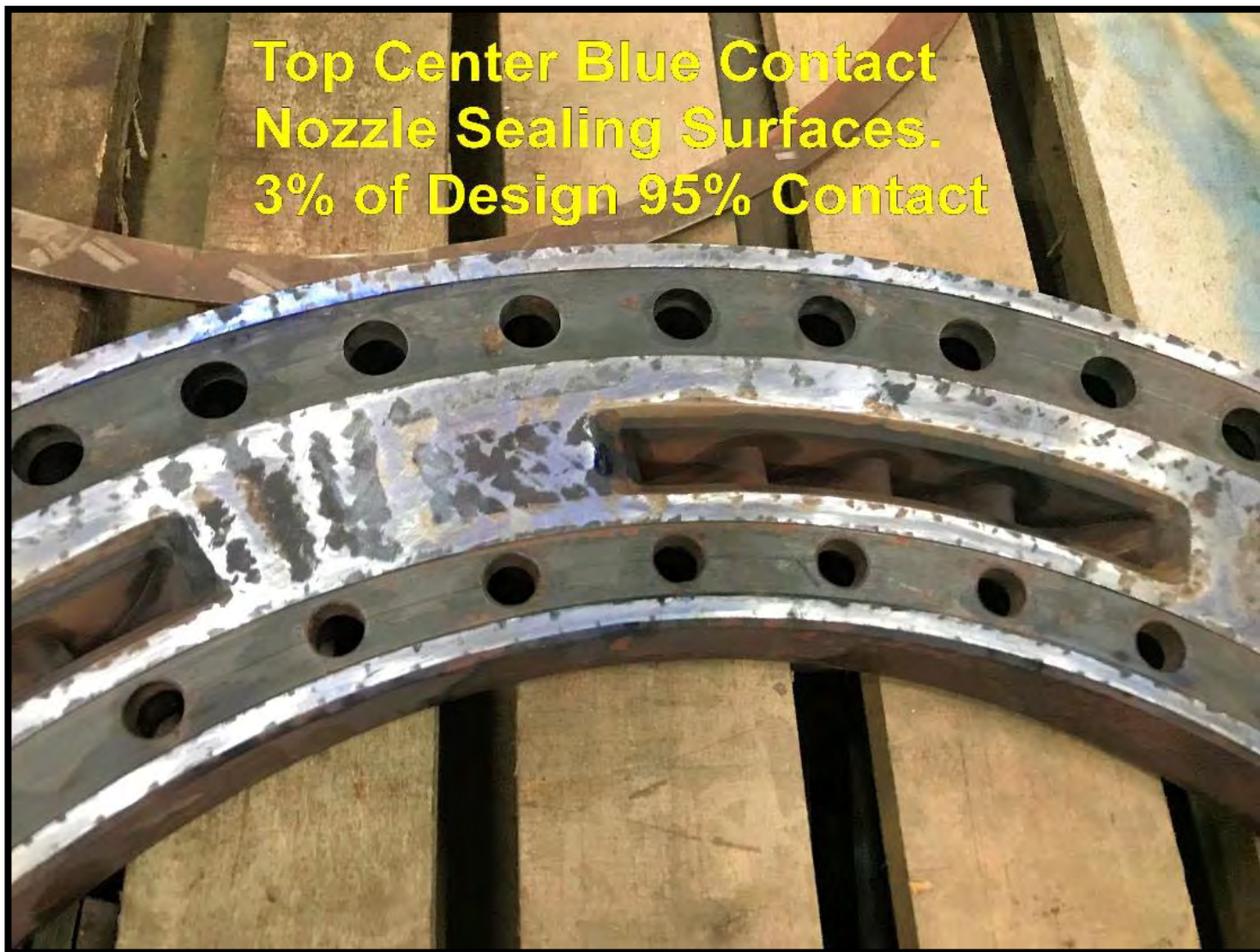
Inlet side of HP nozzle block.



This face seals against HP nozzle steam chamber and needs a totally flat and ground smooth surface to do sealing. The shiny area is capable of sealing, if flat enough to pass blue check. The dark areas are too low to do any sealing. This is not acceptable for use and is made from improper material.

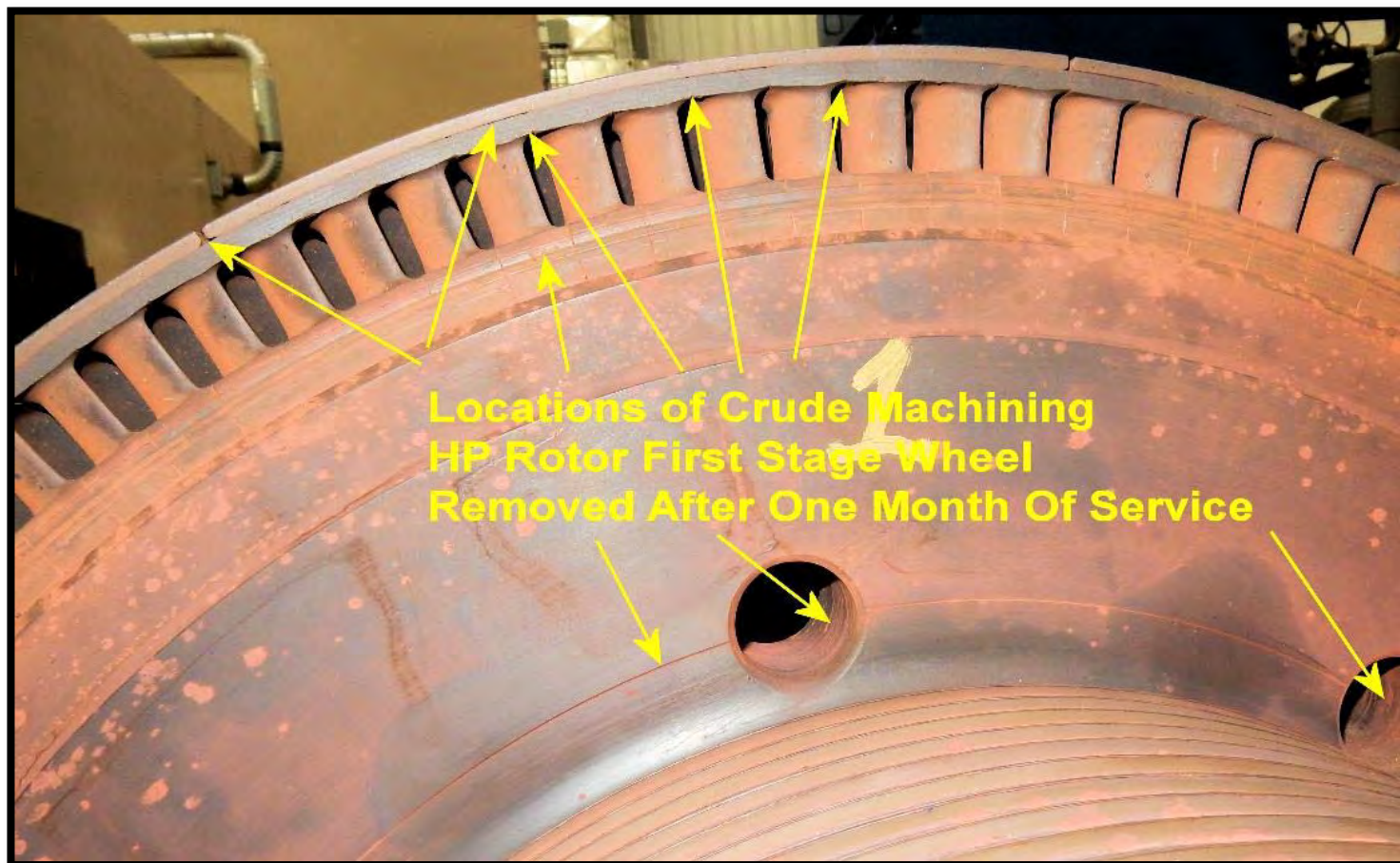


Blue Check- HP Nozzle block and the Nozzle chamber.



The blue check was performed to determine sealing contact between this face of the HP Nozzle block and the Nozzle chamber. It is totally unacceptable to provide sealing. Steam leakage reduces efficiency and output.

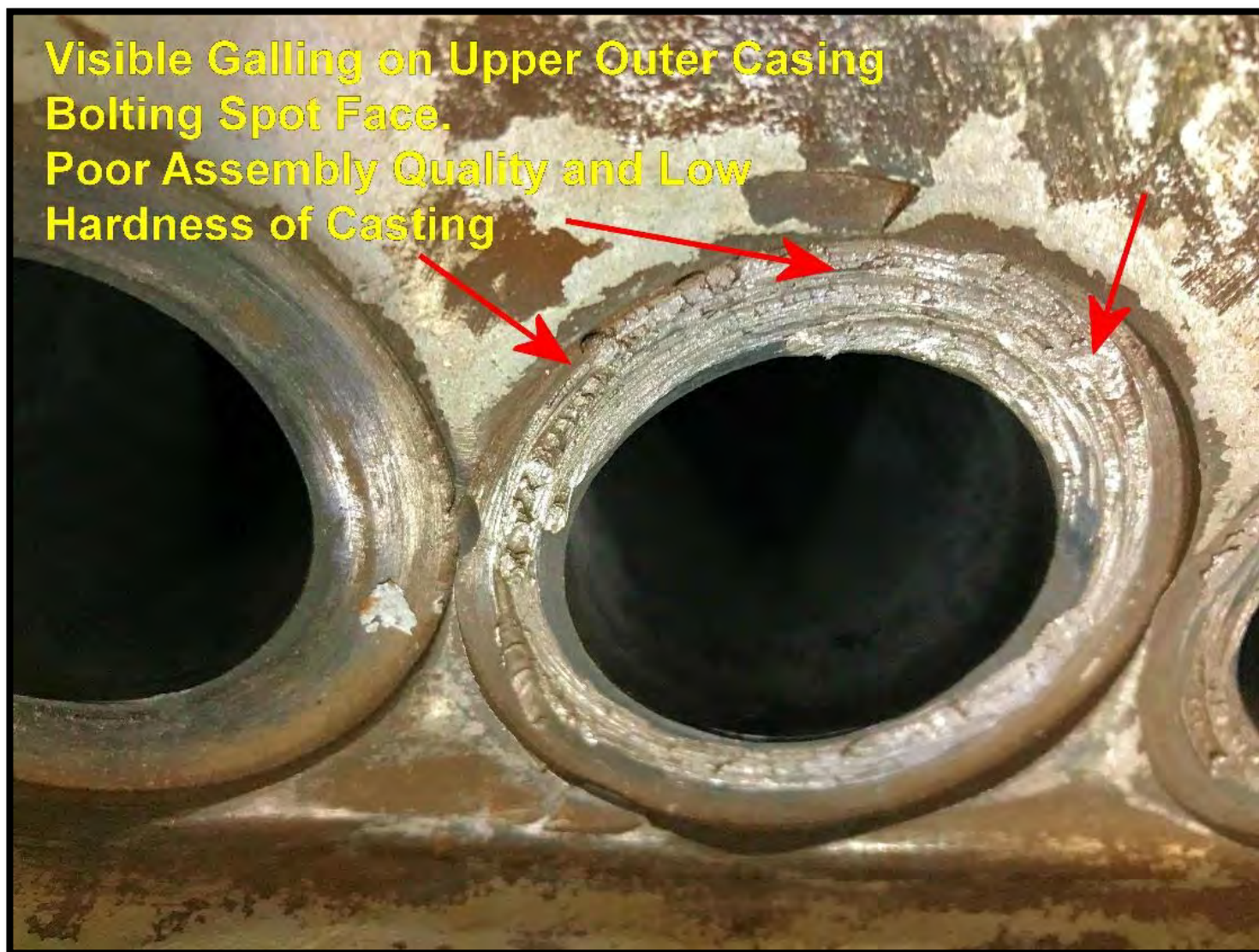
**Inlet side of 1<sup>st</sup> stage rotor wheel.**



The machining is not up to normal industry standards. There are many machined surfaces on the rotor that are not visible when blades and shrouds are installed. This rotor was in service for approximately a month.



### Upper Outer HP turbine casing.



The galling is due to lack of lubricant between nut and casing and the casing material being too soft. This is a likely steam leak point and indicative of more sealing problems to come during and between overhauls. It is unacceptable.



Flange on top of upper HP outer turbine casing.



This flange is where the HP nozzle chamber mounts. It is exposed to 900F temperature from HP inlet steam yet is made from Carbon Steel that is rated for 750F. The flange does not meet ASME standard dimensions for steam conditions. It is unacceptable.

While some repairs might be effective, the components pictured above are not suitable for extended service with the contact steam inlet conditions. They can destructively fail in service and lead to extended downtime, secondary damage and personal injury or worse.



## Materials Used to Manufacture Major Components

In addition to the visual inspection of the steam turbine components pictured in the preceding section, the main stationary components were tested for proper materials and strength in compliance with the ASTM specification for Steam Turbine Casing materials. This section covers the findings to date regarding the suitability of the main stationary components originally supplied by the manufacturer and the continued operation of the steam turbine.

Samples were taken by KMW's subcontractors from the following steam turbine casing components, all depicted in the photographs that immediately follow: (1) HP Nozzle plate; (2) HP Nozzle chamber/CV steam chest; (3) Upper HP outer turbine casing; and (4) Lower HP outer turbine casing (two locations) to determine if they were manufactured from suitable materials.

**This HP Nozzle Plate Bolts to HP Nozzle Chamber Sealing Face.**



The HP Nozzle Plate Converts Steam Pressure into High Velocity Steam to Turn Rotor. This View Faces Towards First Stage Blades on Rotor.

### HP Nozzle Chamber and Steam Chest for Control Valves.



View of Section that Fits Inside Upper Outer Turbine Casing. Flange in Right Side of Photo Mounts to Top Of Upper Outer Turbine Casing Top Opening. HP Nozzle Block Bolts to Circular Bolt Pattern Near Top of Photo



**HP Steam Chest Where Control Valves Mount on Top Flange.**



Flange in Top Part of Photo Bolts to Top of Upper Outer Turbine Casing Opening.



## Upper Outer Casing and Top Opening for HP Nozzle Steam Chest.



### Lower Outer Casing and Flange-Technician Is Sitting On It.



Material samples were removed from the above pictured components to see if they were manufactured from metals appropriate for their use in the steam turbine according to the ASTM A 356 standard. Turbines operating in the USA must be manufactured from ASTM standard materials to ensure they are suited for reliability and safety.

The current specifications for Steam Turbine Casing Material are:



Designation: A356/A356M – 16

## Standard Specification for Steel Castings, Carbon, Low Alloy, and Stainless Steel, Heavy-Walled for Steam Turbines<sup>1</sup>

TABLE 1 Chemical Requirements<sup>4</sup>

Grade/ UNS Number	Material	Composition, %											
		Carbon	Manganese	Silicon	Phosphorus, max	Sulfur, max	Molybdenum	Chromium	Nickel	Vanadium	Columbium	Nitrogen	Aluminum
1 J03502	carbon steel	0.35 <sup>B</sup> max	0.70 <sup>B</sup> max	0.60 max	0.035	0.030	...	...	...	...	...	...	...
2 J12523	½ % molybdenum	0.25 <sup>B</sup> max	0.70 <sup>B</sup> max	0.60 max	0.035	0.030	0.45-0.65	...	...	...	...	...	...
5 J12540	½ % chromium, ½ % molybdenum	0.25 <sup>B</sup> max	0.70 <sup>B</sup> max	0.60 max	0.035	0.030	0.40-0.60	0.40-0.70	...	...	...	...	...
6 J12073	1¼ % chromium, ½ % molybdenum	0.20 max	0.50-0.80	0.60 max	0.035	0.030	0.45-0.65	1.00-1.50	...	...	...	...	...
8 J11697	1 % chromium, 1 % molybdenum, vanadium	0.20 max	0.50-0.90	0.20-0.60	0.035	0.030	0.90-1.20	1.00-1.50	...	0.05-0.15	...	...	...
9 J21610	1 % chromium, 1 % molybdenum, vanadium	0.20 max	0.50-0.90	0.20-0.60	0.035	0.030	0.90-1.20	1.00-1.50	...	0.20-0.35	...	...	...
10 J22090	2¼ % chromium, 1 % molybdenum	0.20 max	0.50-0.80	0.60 max	0.035	0.030	0.90-1.20	2.00-2.75	...	...	...	...	...
A6NM J91540	martensitic chromium nickel	0.06 max	1.00 max	1.00 max	0.040	0.030	0.4-1.0	11.5-14.0	3.5-4.5	...	...	...	...

ASTM A356/A356M – 16

<sup>A</sup> Where ellipses appear in this table, there is no requirement and the element need not be analyzed for or reported.

<sup>B</sup> For each 0.01 % reduction in carbon below the maximum specified, an increase of 0.04 percentage points of manganese over the maximum specified for that element will be permitted up to 1.00.

The various Grades of Steam Turbine Casing Material are designed to offer the manufacturer proven materials for operating stresses and temperatures. Locations of the steam turbine casing that operate at or below 750F can use a minimum of Grade 1 or 2, (or higher) depending on strength requirements. This would apply to the Lower Outer turbine casing as it is not exposed to steam temperature higher than 750F.

Locations of the steam turbine casing that operate at the GRE turbine's 900F steam should use a minimum of Grade 6 (or higher) depending on strength requirements. This would include the HP Nozzle Plate, and the Grade 8 or higher HP Nozzle casing and CV steam chest. Because the Upper Outer steam turbine casing is connected at its upper flange to the 900F HP nozzle casing and CV chest, it should be a welded on flange of a Grade 6 or better or made thicker and stronger if it remained as a Grade 1 or 2.

Grade	Material	Tensile Strength, min, ksi [MPa]	Yield Strength min, ksi [MPa]
1	carbon steel	70 [485]	36 [250]
2	½ % molybdenum	65 [450]	35 [240]
5	½ % chromium, ½ % molybdenum	70 [485]	40 [275]
6	1¼ % chromium, ½ % molybdenum	70 [485]	45 [310]
8	1 % chromium, 1 % molybdenum, vanadium	80 [550]	50 [345]
9	1 % chromium, 1 % molybdenum, vanadium	85 [585]	60 [415]
10	2¼ % chromium, 1 % molybdenum	85 [585]	55 [380]
CA6NM	martensitic chromium nickel	110 [760]	80 [550]

The above table shows the varying room temperature strengths with Grade 1 and 2 having the lowest and increasing strength with higher Grades.

Samples were taken from the following steam turbine casing components: (1) HP Nozzle plate; (2) HP Nozzle chamber/CV steam chest; (3) Upper HP outer turbine casing; and (4) Lower HP outer turbine casing (two locations). The samples were delivered to the St Louis Testing Laboratories facility for chemical analysis and testing for hardness (which are directly related to actual room tensile strength). The purpose of the tests was to determine if the components were made to industry standards. The results of the tests for the five samples are stated below.





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3804 Weber Road  
St. Louis, MO 63125

April 2, 2019

Lab No. 19C-0459

P.O. No. 126195

Page 1 of 1

Attention: Tyler Feth

**REPORT OF ANALYSIS**

**MATERIAL:** HP Nozzle Plate, HP Steam Chest, Lower Casing Side 1, Lower Casing Side 2 & Upper Casing

**SUBJECT:** Compositional Analysis & Hardness

**TEST METHOD:** ASTM E415-17 & ASTM E18-19

**UNITS:** Percent by Weight (%)

**METHOD DETECTION LIMIT:** 0.01% for molybdenum & aluminum

**RESULTS:**

ANALYTE	HP Nozzle Plate	HP Steam Chest	Lower Casing Side 1	Lower Casing Side 2	Upper Casing
Total Carbon	0.19	0.18	0.16	0.04	0.23
Silicon	0.36	0.27	0.30	0.39	0.30
Sulfur	0.010	0.015	0.014	0.015	0.015
Manganese	1.42	0.72	0.97	0.96	0.97
Phosphorus	0.022	0.029	0.024	0.027	0.025
Nickel	0.01	0.23	0.02	0.02	0.02
Chromium	0.04	1.26	0.10	0.03	0.10
Molybdenum	<0.01	0.58	0.01	<0.01	<0.01
Copper	0.01	0.03	0.02	0.01	0.02
Vanadium	0.03	0.13	0.01	0.01	0.01
Aluminum	0.03	0.04	0.04	<0.01	0.04
Iron	Remainder	Remainder	Remainder	Remainder	Remainder
Rockwell Hardness (HRB)	72.0	81.0	80.0		73.0

Identification of tested specimens provided by the client.

JWL/jlm



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Chemical Testing



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## **Discussion of Test Results**

Based on the Chemistry and room temperature hardness (strength) of the tested components, every single vital pressure part failed to meet the minimum chemistry and hardness requirements of the ASTM A356 Standard.

### **Lower Half HP Outer Casing**

The lower half HP outer casing-Side 2 (right side) had excessively low Carbon, while the other Side 1 (left side) sample had sufficient carbon in it to provide needed hardness and strength. The variations in the Carbon content are consistent with improper control over ladle chemistry before pouring molten metal into the casting mold. Since the Right side failed chemistry and hardness requirements, the whole component failed.

### **HP Nozzle Plate.**

This component needs to provide sufficient strength during hundreds of thousands of hours when exposed to the 900F HP Steam Inlet Temperature. Yet the plate was manufactured from a plain carbon steel material limited to 750F. It is not suitable for service.

### **HP Nozzle Chamber and CV Steam Chest.**

While it did meet the Grade 8 chemistry requirements, it only had a room temperature tensile strength of 73,000 PSI based on material hardness, instead of the minimum specified 80,000 PSI. The designer could utilize a lower strength material if they used thicker walls in higher stressed areas. The wall thickness was measured to be approx.  $\frac{3}{4}$ " during my site inspection in an area that would normally be at least twice that thickness even if the material had the proper strength. There was no pressure test results stamped on the outside of the casting, as required under ASTM and API.

### **Upper Outer Turbine Casing.**

The Upper Outer Turbine Casing was cast using Grade 1 Carbon Steel. The chemistry was acceptable for this Grade but that grade was not appropriate for the thin top flange that mates to the 900F HP Nozzle chamber, used by the manufacturer. Neither of the mating flange parts were sized for the 600 psi service. The Upper Outer Turbine Casing also had insufficient (65,000 actual and design minimum is 70,000) hardness and resulting tensile strength.

### **Summary.**

Other than the Lower Outer Steam Turbine casing, the critical steam turbine stationary components were not manufactured to the industry standards for material strength at room and operating temperatures identified in the KMW Contract. This lack of strength unacceptably compromises the long term reliability of the components and their ability to contain the high temperature and internal pressure of the steam and could potentially lead to a catastrophic failure. If personnel are exposed to the steam leaks in such an event they could be seriously injured or killed.

## MDA Summary of Turbine Component Acceptance Based on Present Knowledge

Component	Accept/Reject
Turbine Rotors (Running and Spare)	<b>TBD</b>
Emergency Stop Valve (ESV)	<b>TBD</b>
Governor	Accept
Thrust Bearing	<b>Reject</b>
Main Journal Bearings	Accept
HP Turbine Casings	<b>Reject</b>
LP Turbine Casings	Accept
Turbine Diaphragms	<b>TBD</b>
Nozzle Block	<b>Reject</b>
Steam Chest/Nozzle Chamber	<b>Reject</b>
Control Valves	<b>Reject</b>
Valve Operating Cylinder	<b>Reject</b>
HP Glands	Accept
LP Glands	<b>Reject</b>
Front Standard	<b>TBD</b>
Exhaust Standard	Accept
Skid frame	Accept
Generator Synch Panel	<b>Reject</b>

## Statement of Conclusions

The existing steam turbine does not meet the design and operating requirements of the KMW Contract. Therefore, it should be rejected by GRE and replaced by KMW for multiple reasons. These reasons include, but are not necessarily limited to the following:

- The critical pressure parts of the steam turbine were not manufactured to industry minimum proven safety standards for materials and design. The steam turbine castings are substandard in material properties and thickness to safely contain the hot high-pressure steam that if leaked, would seriously burn or cause death to operating personnel. The turbine was quoted as complying with all industry standards, but all the material tests done so far, show the components as a whole, are deficient and do not comply with the minimum ASTM A356 or API 611 requirements for USA operated steam turbines. The materials are not stamped with ASTM stampings or shown on drawings.

The manufacturer has no fix for this.

- The steam turbine is guaranteed to operate with defined inlet steam conditions and flow rates. The steam inlet conditions are met with 97% of design flow rate. The electrical output is deficient and output is limited by the inefficient steam turbine to only 84% of the guaranteed output.

The only sure fix is a total steampath replacement of all stages and casings. The manufacturer has offered no fix.

- The steam turbine was originally designed to output more power than GRE needed. To meet GRE's needs, the turbine manufacturer made stage design alterations to limit the output to about 70% of its original design. When these inlet stage alterations were made, this led to compromises in downstream stage efficiencies. The steam turbine will never meet the design output at the design steam inlet conditions and design flow rates for inlet steam and extraction steam.

GRE can overcome some of the steam turbine inefficiencies by burning more fuel to flow more than design steam flow, but that forever increases operating costs at all load points and does not meet the performance guarantee of the contract.

The manufacturer has no fix for this.

- Supplier lacks sufficient design engineering to make it work right over time. When the first rotor was operating, the turbine could be restarted after a hot shutdown without any delays. Since the spare rotor was installed, the turbine cannot be restarted without high vibration, until after about a 12 hour delay. The casing temperature must cool down below 450F before the rotor can turn without rubbing. This has made the turbine useless for at least 12 hours every time it is shutdown, usually for some turbine related problem.



The manufacturer has no credible fix for this.

- The quality of the casting and machining of the turbine are not up to industry standards. The casting lacked material at critical locations so weld and mechanical fixes were attempted in some areas while other areas lack sufficient material thicknesses, sufficient sealing contact area, industry standard surface smoothness, industry standard for corner radii, etc. There is evidence of patch weld repairs made without proper documentation for following necessary ASME and ASTM standards.

The casting NDE paperwork is lacking to verify the casting internal areas are free of defects which would weaken the material and make it more likely to leak or fail under pressure.

The only fix for this would be to replace the critical components with properly made ones. However replacing the improperly manufactured parts that have been currently identified would be more costly than replacing the turbine with a correctly designed and manufactured one for 8.5 MW.

- The rotor is a critical component and is necessary for the turbine to operate reliably and safely. The rotor is assembled and the critical machined fits between the blading and the rotor forging are not visible to the naked eye and there is no way to verify their quality without disassembling the rotor and replacing all the blading that would be damaged during disassembly.

Our concerns are based on how many machining defects are found on machined areas we can see and can't verify that there are not hidden machined defects in the areas we can't see.

The only fix for this is to further damage expensive parts by removing them to see what is under them.

- There is a total lack of prompt access to the turbine manufacturer. The manufacturer's time zone is almost half a day ahead of the GRE personnel at the site. This limits prompt email access to the manufacturer. Due to immigration concerns only one of the manufacturer's technical personnel are available to travel to the site. That person's availability is limited by business and personal concerns. This is not acceptable for the around the clock power production needed by the owner.

The manufacturer has no fix for this.

- The steam turbine has had a poor maintenance record and that has required numerous parts to be replaced or ordered for replacement. Most of the steam turbine parts are unique to the Chola turbine design and not available from other domestic sources.

This forces the owner to rely almost solely on the manufacturer for spare parts and technical service as there is no domestic source for Chola trained service personnel. GRE is now relying on one self-taught Chola technical director but that person is aged and future availability is unknown. This is frustrating to the owner and puts them in a precarious position of not having rapid availability of needed engineering service and spare parts.

The manufacturer has no fix for this.

- The steam turbine has various protective operating limits to protect it from operating at temperatures or speeds above component material limits. One of these is the thrust bearing babbeted pads. The active thrust bearing has recorded high metal temperatures since initial operation. The Alarm limit is 270F. The active thrust pad temperature increases with MW output. We are presently limited to 7.1 MW due to the bearing temperature at the Alarm Point.
- The turbine manufacturer disabled the temperature limit and for a few minutes, the output could be raised to 8.5 MW output with above design steamflow. This is not safe as the temperature limit is needed to protect the bearing babbet from melting and losing the active thrust bearing. The loss of the bearing would allow the rotor to move downstream and could lead to extensive damage to the internal parts. It is unsafe to operate above the design bearing temperature limits.

The manufacturer has no fix for this.

Based on the above, and the negative impact to GRE associated with down time and loss of income, in trying to resolve all of the above, we can see no other option other than to have the supplier replace the turbine with one that meets industry standards and has a North American based service organization and spare parts inventory.

While the above is highly critical of the large pressure parts examined so far, it should be noted that most all of the critical steam turbine parts HAVE NOT been inspected or tested to see if they are suitable for the long reliable and efficient service, that is promised in the contract.

It is not feasible to perform all the needed inspections and testing. We could rely on the manufacturer but based on the results of what we have inspected so far, I strongly recommend rejecting the existing steam turbine. Then work with the supplier to obtain a steam turbine from a manufacturer with necessary manufacturing and service roots in the USA and that is suitable for the GRE mill needs.

Report Prepared by  
David M. Rasmussen  
Principal Engineer  
MD&A, Ltd.  
Email:drasmussen@mdaturbines

**TAB D**

This is **Exhibit "D"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020

*Douglas C. Fortin*

Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24

David C. Pierson  
dpierson@eatonpeabody.com



100 Middle St., P.O. Box 15235  
Portland, Maine 04112-5235  
Phone 207-274-5266 Fax 207-274-5286  
www.eatonpeabody.com

May 3, 2019

VIA EMAIL ONLY [aatcheson@millerthomson.com](mailto:aatcheson@millerthomson.com)

Eric B. Rosen, M.Sc., P. Eng.  
c/o Aaron E. Atcheson  
Miller Thomson LLP  
One London Place  
255 Queens Avenue, Suite 2010  
London, Ontario N6A 5R8

**RE: Georges River Energy, LLC  
KMW Energy, Inc.**

Dear Aaron:

Enclosed on behalf of Georges River Energy (“GRE”) please find a copy of the May 3, 2019 report titled “Review of Design, Maintenance and Operational Problems with the Steam Turbine Purchased from KMW Energy, Inc. and Manufactured by Chola Turbo Machinery International” prepared by David Rasmussen P.E. of Mechanical Dynamics & Analysis, LLC (the “Rasmussen Report”). The Rasmussen Report addresses the steam turbine manufactured by Chola Turbo Machinery International (the “Turbine”) and supplied by KMW Energy, Inc. (“KMW”) under the contract between the parties titled Agreement between Buyer and Seller For Procurement Contracts (EJCDC P-520) dated December 6, 2016 (the “Procurement Contract”). Mr. Rasmussen conducted his investigation at the request of GRE in accordance with section 8.01.C of the standard General Conditions for Procurement Contracts (EJCDC P-700) (the “General Conditions”).

As you will note, Mr. Rasmussen concludes that the Turbine fails to comply with industry standards and the requirements of the Procurement Contract in a number of material respects. These include, but are not limited to, the failure to manufacture major components of the Turbine with suitable materials that comply with the required Procurement Contract standards. Further, the Turbine has proven to be incapable of producing power and steam at the levels required under the Procurement Contract due to its defective design and manufacture.

For the above-stated reasons, and in accordance with sections 8.02.A-B of the General Conditions, **GRE is hereby notifying KMW that it is rejecting the Turbine as a non-conforming Good and requiring it be replaced with a new steam turbine that conforms to industry standards and the requirements of the Procurement Contract.** GRE has also notified Mid-South Engineering of the rejection of the Turbine in accordance with the requirements of section 9.06.A of the General Conditions.

The specific claims and references to the related provisions of the General Conditions identified in this letter relate only to the rejection of the Turbine as a non-conforming Good and should not be construed as a waiver of any other claims GRE may have or of the other rights or remedies available to GRE under the Procurement Contract, including any applicable claims for default under the Performance Bond, or under any law or regulation, all of which are expressly reserved.

Thank you for your prompt attention to this matter which GRE hopes to resolve through negotiations in accordance with section 9.06.E of the General Conditions. To facilitate that process, please send me copies of any reports on the Turbine prepared by any of the consultants who have worked on the Turbine including, but not limited to, the one prepared by Rotating Machinery Services which GRE understands KMW has received in late April.

Sincerely,

  
David C. Pierson

DCP/dm

cc: Georges River Energy (w/ encl.)  
Mid-South Engineering, Inc. (w/ encl.)  
P. Andrew Hamilton, Esq. (w/ encl.)

Enc.

**TAB E**

This is **Exhibit "E"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020



Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24



14-Jun-2019

VIA EMAIL ONLY [DPierson@eatonpeabody.com](mailto:DPierson@eatonpeabody.com)

James A. Robbins  
c/o David C. Pierson  
EATON PEABODY  
100 Middle Street  
P.O. Box 15235  
Portland, Maine 04112-5235

VIA EMAIL ONLY [aatcheson@millერთhompson.com](mailto:aatcheson@millერთhompson.com)

Eric B. Rosen, M.Sc., P. Eng.  
c/o Aaron E. Aatcheson  
Miller Thompson LLP  
One London Place  
255 Queens Avenue, Suite 2010  
London, Ontario N6A 5R8  
CANADA

RE: 7066.37.05.03 - Georges River Energy/Searsmont, ME  
Review of Non-Conforming Goods Claim by Georges River Energy, LLC dated May 3, 2019

To Whom it may Concern:

Mid-South Engineering (MSE) offered to Georges River Energy (GRE), at the request of GRE's legal representative, to serve as Engineer in a decision-making process related to a GRE claim of non-conforming goods. In this capacity, MSE will accept and review all supporting documentation from the contracted parties related to a GRE claim of the KMW Energy Inc. supplied steam turbine as a non-conforming good in a letter submitted by Eaton Peabody on behalf of GRE dated May 3, 2019. (Appendix A)

Prior to May 1, 2019, Mid-South Engineering completed and fulfilled its obligation to provide requested engineering services for Georges River Energy related to their project to install a biomass boiler and turbine system in Searsmont, Maine. Following completion of this work, MSE was requested by GRE to act as Engineer as defined in Section 9.06 of a contractual agreement between Georges River Energy LLC and KMW Energy Inc. dated Dec. 6, 2016 (Appendix B) and to which, Mid-South Engineering is not signatory. Believing that we can be objective and impartial, MSE provided Proposal No. 7066.37.07.10-001, Rev. 0 dated May 2, 2019 to Georges River Energy, LLC. (Appendix C) to serve in the capacity of Engineer and were subsequently given a purchase order for these services.

The claim, as written, incorporates a report from Mr. David Rasmussen of MD&A, LLC dated May 2, 2019 (Appendix D, "Rasmussen Report") that the supplied turbine fails to comply with industry standards and also fails to meet the requirements of the procurement contract between KMW and GRE. Further GRE has claimed that the turbine has proven to be incapable of producing power and steam (extraction) at the levels required under the procurement contract. To satisfy this claim, GRE is requesting a replacement turbine that conforms to both industry standards and the requirements of the procurement contract.

In review of the claims by GRE and responses by KMW, numerous codes and/or standards have been referenced, along with the procurement contract, and will be considered in this review. The contract provides specific codes and standards that are incorporated and are shown in Appendix K of this document. The other codes referenced in supporting documentation include API 611, API 612, ASME Section VIII Div. 1&2, ASME Section II, ASME/ANSI 1.5, ASTM A356, ASTM A488, and are not clearly identified in the contractual agreement. They are, however, valid codes or standards that have been developed and further revised to meet safety and quality needs of the final product. Suppliers may and oftentimes do routinely use these in designing, manufacturing and testing of their turbines. Determination of conformance/non-conformance is limited to information provided by each party and interpretation of code/standard/contract applicability to the design and operating conditions of this turbine, as specified in the procurement contract. The contract states that "the equipment and materials shall comply with all applicable National Codes, Standards and Regulations."

Although initial claim was filed on May 3, 2019, final documents were submitted to Mid-South Engineering for consideration on June 10, 2019.

Mid-South Engineering reviewed each claim individually and arrived at conclusions for each claim, then a final summary conclusion was made based on consideration of the resultant total impact to substantiate a claim that the turbine, as a whole, constitutes a non-conforming good.

### **Standards**

Importantly, the contract does not explicitly reference any API Standard, but, it is an internationally accepted practice to follow whatever codes and/or standards would apply to the design, manufacturing and testing of a specific steam turbine. With GRE's turbine, the question of which API standard is applicable is a point of contention with KMW having used a turbine supplier that adheres, for the most part, to API 611 5<sup>th</sup> edition "General Purpose Steam turbines for Petroleum, Chemical and Gas Industry Services" and refers to this standard in responses. The API 612 standard dated 1995 "Special Purpose Steam Turbines for Petroleum, Chemical and Gas Industry" is also referenced by GRE (MD&A report) in the claim and the two standards are for steam turbines but are not identical nor complementary. As this turbine was built in 2017 any reference to a 1995 standard seems outdated, with the current edition released in 2014, but the intent of that standard still exists today. General Purpose turbines, as defined in both API 611 and 612 are "horizontal or vertical turbines used to drive equipment that is usually spared, is relatively small in size (power), or is in non-critical service. They are generally used where steam conditions will not exceed a pressure of 48 bar (700 psig) and a temperature of 400 deg C. (750 deg F) or where speed will not exceed 6000 r/min". "Special Purpose turbines, are those horizontal turbines used to drive equipment that is usually not spared, is relatively large in size (power), or is in critical service. This category is not limited by steam conditions or turbine speed".

The following table identifies which conditions of the API 611 and 612 standards apply to the GRE turbine.

<u>GRE Turbine Conditions</u>	<u>API 611</u>	<u>API12</u>
Horizontal Design	Applies	Applies
Unit is not spared	<b>Does not apply</b>	Applies
Relative size 8.5 MW (Small to mid-size)	Applies	<b>Does not apply</b>
Design pressure 900 psig	<b>Does not apply</b>	Applies
Design Temperature 900 deg F	<b>Does not apply</b>	Applies
Speed > 6000 rpm	Applies	Applies
Non-Critical Service	Applies	<b>Does not apply</b>

In considering which API standard applies, MSE used the criteria established in the respective standards, noting that GRE's turbine is of horizontal design, is not spared, is relatively small in size, is not in critical service, is designed for 900 psig and 900 deg F, and has an operating speed of 5500 r/min. From these seven conditions, the API 611 standard meets 4 of the seven conditions while not meeting the limits for operating pressure and temperature, which are generally limited to 700 psig and 750 deg F. API 612 applies to 5 of the seven conditions, horizontal design, not usually spared, and not limited by steam conditions of pressure and temperature. API 612 does not apply in the conditions for critical service or relative size (power). Given that neither of these standards completely and fully meets the conditions assigned to classify the turbine, MSE is considering both standards as valid and applicable in our decision. In overlapping areas, the more demanding standard would be applied.

Definitions of codes and standards might be helpful: ***"A standard is a set of technical definitions, specifications, and guidelines. They function as instructions for designers, manufacturers, operators, or users of equipment. If you are building something, a standard tells you about the materials, process, designs, structure, etc. In brief, standards tell you how to do something."***

***"When a standard has been adopted by governmental bodies and has the force of law, it becomes a code. A standard also becomes a code when it has been incorporated into a business contract. A code is a set of rules that experts in the field recommend people to follow; it is a model. Although it is not a law, it can be adopted into law. A code tells you what needs to be done, but it doesn't explain how it should be done. Some examples of Codes include International Building Code, ASME Boiler and Vessel Code, and AWS D1.1."***

Both API 611 and 612 standards then incorporate by reference other codes or standards including ASME Boiler and Pressure Vessel Codes Sections II, VIII, IX, ASME B1.1, B1.20.1, B16.1, B16.5, B16.11, B16.42, B16.47, B17.1, B31.3, PTC 6, AWS D1.1, ASTM A105, A106, A153, A193, A194, A197, A269, A307, A312, A338, E94, E709.

Additionally, only API 611 (API 612 does not) includes references to ASTM A181, A320, A388, A524, A563, A578, A609, E165 and E1003 and only API 612 (API 611 does not) includes references to ASTM A53, A192, A247, A278, A358, A395, A418, A472, A515, A536, E125, E142. The majority of the different references in API 612 relate to operation at higher temperatures and alloy materials.

### **Materials and Metallurgy**

In the MD&A report, it is stated that the material used for some critical components is not selected to meet the proper applicable standards needed for the pressure and temperature to which these components are exposed. KMW has responded that the materials selected meet the conditions at which the turbine operates. The named components include the upper and lower HP casings, which have upper temperature limits of 800 deg F and sustained operational exposure limited to 740-760 deg F (per KMW's May 31 letter listed as Appendix J).

Having two experienced and knowledgeable companies differ on this very important material specification raises serious concerns about safety both near term and long term. MSE, with information provided, cannot determine which authority is correct, but we do believe that the casing temperature absolutely influences the long-term viability of this unit, and that actual physical temperature measurement is needed to complete an evaluation of the worthiness of the casing material. These temperature measurements should be completed sooner, rather than later. MSE recommends that KMW and GRE put together a plan on how to obtain real and accurate temperature measurements for the named components

### **Turbine Performance**

The turbine performance forms part of KMW's guarantee. In this contract the guarantee is tied to performance and design criteria, as listed under "TECHNICAL PERFORMANCE DATA", in attached Appendix E.

The only supporting documentation provided to assist in determining whether or not the turbine is conforming in the area of performance is largely incomplete. MSE has received from KMW an RMS modeling report (Appendix F) and from GRE several ATS reports (Appendices G and H).

It must be noted that no quantitative empirical data has been provided to document power generation at specific inlet pressure, inlet temperature, inlet flow, extraction pressure, extraction temperature, extraction flow, condenser vacuum level, and condenser flow to compare with the technical performance data incorporated in the KMW guarantee.

The RMS report predicts performance of the turbine based on the physical inspection and measured geometry of the turbine components. According to RMS, achieving full power output of 8.5 MW can only be achieved with higher inlet steam flow. Furthermore, operating at maximum design conditions of 900 psig and 900 deg F with 92,868 pph inlet steam flow and extraction flow of 49,765 pph, generation would only achieve 7.64 MW, approximately 10% less than guaranteed for these conditions. This RMS report is dated April 17, 2019 and no comment, reply or contradiction has been provided to MSE that refutes RMS findings.

In an ATS report (Appendix G), dated May 2, 2019, ATS states "there is no way to cleanly verify HP inlet flow" and "there is no way to cleanly verify LP 60# extraction flow" and ATS further states "In order to develop an accurate steam map, two flow meters will have to be installed, one at the HP inlet to the turbine and one at the 60 # extraction". These comments refer to measurements needed to complete an accurate energy balance of the turbine only.

In a separate ATS report (Appendix H), dated June 3, 2019, where ATS was requested to assist GRE in resolving extraction steam flow control problems where extraction pressure of 60 psig could not be

maintained, ATS stated after resolving the control issue: "In conclusion, it must be noted that regardless of V2 position at turbine loads less than 7MW the extraction header cannot meet or maintain 60 psi and at loads greater than 8MW the extraction header pressure rises to the point of lifting the safety valve, set at 70 psi. This operating condition prohibits GRE from running an efficient plant, ultimately costing them money, as they cannot maintain a steady DA temperature due to the fluctuating 60# header across the operating profile of the turbine. This condition must be addressed." The V2 refers to the grid valve used to control steam flow through the turbine.

In the MD&A response of May 24, 2019 (Appendix I), it is stated "The steam turbine was operated by GRE in April and May 2019 to determine maximum output with valves wide open and the boiler at maximum flow capability. This was not feasible except under unusual operating conditions as all three Control Valves could not be opened due to the lack of adequate hydraulic force to overcome the steam pressure drop forces. This is a design fault by the supplier and needs to be rectified.

The maximum capability of the steam turbine was increased from 92,400 pounds per hour to 95,000 pounds per hour. Even at this excessive flow rate, only 7.3 MW of electrical output were measured vs the guaranteed design output of 8.5 MW gross at 92,400 pounds per hour at design steam pressures and temperatures. Not only was more steam being fed to the HP inlet to increase MW output, the extraction steam was reduced to further increase MW output from the LP section. The Extraction steam was reduced to approximately 15,000 pounds per hour from the allowed 49,100 pounds per hour. This shows how the steam turbine lacks the necessary efficiency to convert steam energy into electrical energy."

"The steam turbine design firm, Rotating Machinery Services, was contracted by Energy Resources Group to perform a performance analysis on the CMTI components when they were disassembled in March 2019. The RMS report was released in April of 2019 and concluded that the CMTI steam turbine stages were not idealized for the steam flow and conditions found at GRE. This resulted in lower than typical thermal efficiencies.

The report noted that the turbine frame sold to GRE is known as a Chola 152C steam turbine. Its design operating range is 13.5 to 20 MW. The output required by GRE is 8.5 MW with about 50% of steam extraction."

To this comment, KMW responded (noted in Appendix J):

"CTMI/BT have been requesting the operating parameters multiple times since the turbine was loaded to 8.5 MW. After waiting for more than 4 weeks there was no response from the site at which time BT sent its own representative to site to record the operating data. Here are our notes on the data recorded and also the points mentioned by MD&A:

1. No steam flow meter is installed before the turbine inlet, the flow readings indicated in report are from the flow meter installed after the boiler. It does not take into account the line losses and also the steam flowing to steam sealing system and steam ejector, any other leakages in the line prior to the steam entering the turbine flange cannot be ruled out either.
2. No steam flow meter installed in the extraction line, how can one assume the extraction flow without this?
3. Operating procedures followed for cold and hot start were not as per the instructions of CTMI.

4. There is serious doubt regarding the governor program currently being used via the Woodward 505XT.

Under the circumstances it is unclear how the performance of the turbine can be judged without proper engineering data. Does Mr. Rasmussen from MD&A have a reliable source of gathering data other than what is available at site? CTMI/BT needs clear data to respond to this allegation."

In this area, MSE believes that there are enough measured parameters associated with the turbine installation to complete a realistic and representative review of performance in comparison to the technical performance conditions listed in the contract. References by ATS and CTMI that additional inlet steam flow and extraction steam flow meters are needed to complete an accurate balance are not practical when these meters do not currently exist and would be expensive for GRE to purchase and install. However, it is our understanding that GRE is proceeding with the purchase and installation of these meters.

Regarding KMW's statement that "There is serious doubt regarding the governor program currently being used via the Woodward 505XT", we wish to emphasize that it is the contractual responsibility of KMW/CTMI to program the Woodward Governor 505XT as it sees fit to achieve the desired performance, since this equipment is part of KMW's scope of supply.

### **Summary Conclusions**

1. With respect to the claim of the turbine not complying with industry standards, MSE finds that the vendor's use of API 611 as the guiding standard does not take into account three conditions where this standard does not fit.
  - a. The GRE turbine operates at higher pressure of 900 psig than the 700 psig stipulated in API 611
  - b. The GRE turbine operates at a higher temperature of 900 deg F than the 750 deg F stipulated in API 611.
  - c. Additionally, since this turbine is not spared, it does not fit the API 611 condition for "usually spared".

Since API 612 covers these conditions not covered under API 611, it should have been employed in the design, manufacturing and testing of GRE's turbine in addition to the vendors choice to use API 611 applicable sections. The contract provides language that states, "The equipment and materials shall comply with all applicable National Codes, Standards and Regulations". MSE believes that KMW did not employ all applicable standards in the design, manufacture and testing of GRE's turbine. Best use of industry standards was not followed.

2. Somewhat covered under the category of Standards but important enough for discussion is the metallurgy selected and employed for critical components of the turbine. The differing opinion between MD&A and KMW does not resolve the question of whether or not the casing material selected is suitable for the conditions to which it is exposed. Although MSE believes that this material may be suitable, (if KMW's explanation is valid and can be confirmed), the material's higher temperature performance limit leaves very little room for error and without absolute knowledge of

what the actual exposure temperature might be, more data is needed. In this area we strongly recommend that some form of temperature measurement be employed to gather data on temperatures in the area of greatest exposure under varying conditions over a representative time period. We are unable to conclude the suitability or lack thereof of this material without more information.

3. With respect to the claim of the turbine being incapable of producing power and steam at the levels required under the Procurement contract due to its defective design and manufacture, no quantifiable empirical data has been provided to MSE that substantiates this claim. Despite that, there is sufficient information provided in the RMS modeling report and ATS reports that casts significant doubt that the turbine can perform to design conditions as supplied by KMW. No information provided by KMW challenges this claim and no performance testing or analysis data has been provided to prove that it does meet design conditions. At this time, we can only conclude that the turbine is non-conforming in the performance guarantee area of the contractual agreement.
4. With respect to the claim of the turbine not complying with the requirements of the contract, there is sufficient evidence provided in the ATS reports and reaffirmed in the MD&A report that manufacturing quality and workmanship were sub-standard, to the level of creating justifiable suspicion that some components may not meet minimum safety or operating conditions. Based on the reports provided by ATS, RMS and MD&A we conclude that the turbine has not met all conditions of the contractual agreement.
5. To summarize, MSE concludes that the turbine is non-conforming due to API design standards and workmanship. There is also significant suspicion to suggest that it does not conform to the performance guarantee or the metallurgy standards. Additional data would need to be collected to fully confirm these suspected non-conformances.

Sincerely,

MID-SOUTH ENGINEERING CO.



Walter Goodine

WDG/bl

Enclosures: Appendices A-K

xc: Mark Steward (MSE/Hot Springs, AR) w/e  
James St. Pierre (MSE/Orono, ME) w/e  
Pierre Letarte (MSE/Orono, ME) w/e  
Andy Hamilton (Eaton Peabody/Bangor, ME) w/e  
Gary Higgins (KMW/London, Ontario) w/e

**TAB F**



This is **Exhibit "F"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020

*Douglas C. Fortin*  
.....

Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24

----- Forwarded message -----

From: **Gerry Higgins** <[ghiggins@kmwenergy.com](mailto:ghiggins@kmwenergy.com)>

Date: Thu, Aug 22, 2019 at 1:44 PM

Subject: FW: Steam Turbine Selection

To: Jim Robbins <[jarobbins@rlco.com](mailto:jarobbins@rlco.com)>

Cc: <[ebrosen@kmwenergy.com](mailto:ebrosen@kmwenergy.com)>, Kevin Sheehy <[ksheehy@kmwenergy.com](mailto:ksheehy@kmwenergy.com)>, Thomas Butler <[thomas.butler@kmwenergy.com](mailto:thomas.butler@kmwenergy.com)>, Allen Yang <[ayang@kmwenergy.com](mailto:ayang@kmwenergy.com)>, Atcheson, Aaron <[aatcheson@millერთhompson.com](mailto:aatcheson@millერთhompson.com)>, Ian S. Epstein <[iepstein@blaney.com](mailto:iepstein@blaney.com)>

Hi Jim

Further to Eric's email updating everyone on KMW's progress with vendors, we suggest a conference call with you and your team to walk through the spreadsheet he just sent. We believe it would also be good to schedule a set time each week to review the prior week's progress and plan the next week's activities. To that end, are you and your team available for a call tomorrow at 12:30 EDT? Or, does another time work better?

sincerely,

Gerry Higgins

President

KMW Energy Inc.

Office: [519 686 1771](tel:5196861771)

Fax: [519 686 1132](tel:5196861132)

Don't feel bad printing this e-mail. Paper is a biodegradable, compostable, renewable, sustainable product made from trees. Growing and harvesting trees on a sustainable basis provides millions of direct and indirect jobs worldwide (including mine). Working forests are good for the environment; providing clean air, clean water, wildlife habitat and carbon storage.

---

**From:** Eric Rosen [mailto:[ebrosen@kmwenergy.com](mailto:ebrosen@kmwenergy.com)]  
**Sent:** August-22-19 2:17 PM  
**To:** Jim Robbins <[jarobbins@rlco.com](mailto:jarobbins@rlco.com)>  
**Cc:** Kevin Sheehy <[ksheehy@kmwenergy.com](mailto:ksheehy@kmwenergy.com)>; Allen Yang <[ayang@kmwenergy.com](mailto:ayang@kmwenergy.com)>; Gerry Higgins <[ghiggins@kmwenergy.com](mailto:ghiggins@kmwenergy.com)>  
**Subject:** Steam Turbine Selection

Jim,

The enclosed file is our format for this program of selecting a suitable turbine. Great progress has been made but there is still work to be done before we can make the final selection together with GRE.

We intend to provide update to this file as we progress.

Best regards,

Eric

----

Eric B. Rosen, M.Sc., P.Eng.

CEO

KMW Energy Inc.

p. 519.686.1771

[ebrosen@kmwenergy.com](mailto:ebrosen@kmwenergy.com)

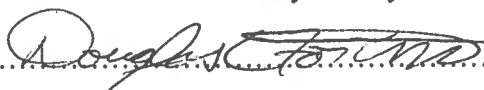
[kmwenergy.com](http://kmwenergy.com)

**NOTE: We have moved. Please update your records with our new address:**

**A-275 Colborne St., London, ON, Canada N6B 2S7**

**TAB G**

This is **Exhibit "G"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020

  
.....

Notary Public  
Commission expires:

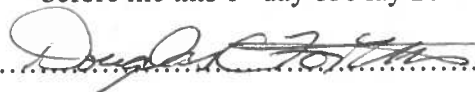
DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24

GRE/KMW TURBINE REPLACEMENT PROJECT																																					
WEEK #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15-55 25-Oct thru 31-Jul	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	ABSOLUTE
WEEK END DATE	19-Jul	26-Jul	2-Aug	9-Aug	16-Aug	23-Aug	30-Aug	6-Sep	13-Sep	20-Sep	27-Sep	4-Oct	11-Oct	18-Oct	25-Oct	7-Aug	14-Aug	21-Aug	28-Aug	4-Sep	11-Sep	18-Sep	25-Sep	2-Oct	9-Oct	16-Oct	23-Oct	30-Oct	6-Nov	13-Nov	20-Nov	27-Nov	4-Dec	11-Dec	18-Dec	25-Dec	DEADLINE
<b>TASK(S) - PARTICIPANTS (K=KMW, G=GRE, E = Engineering firm V=Turbine Vendor)</b>																																					
REACH AGREEMENT ON THE PLAN KG	2 WK																																				
RFQ + VENDOR LIST - K E	2 WK																																				
VENDOR CONTACT - K E	3 WK																																				
VENDOR VISITS K G E	3 WK																																				
VENDOR PROPOSAL PREPARATION V	5WK																																				
VENDOR PROPOSAL SUBMISSIONS V	1 WK																																				
VENDOR PROPOSAL REVIEW K E	1 WK																																				
VENDOR NEGOTIATIONS AND SELECTION K E	1 WK																																				
PURCHASE ORDER TO VENDOR K	1 WK																																				
TURBINE MANUFACTURING BEGINS V	47 WK																																				
CTMI EQUIPMENT REMOVAL K G V	>>>>>																																				
NEW TURBINE SITE PREPARATIONS K G V	2 WK																																				
NEW TURBINE IN TRANSIT V	5 WK																																				
NEW TURBINE ARRIVES	4 WK																																				
NEW TURBINE INSTALLATION V + E	2 WK																																				
NEW TURBINE COMMISSIONING AND START UP - ALL	6 WK																																				
NEW TURBINE FINE TUNING - ALL	3 WK																																				
COMMENCE FULL PRODUCTION - G	2 WK																																				
CONTINGENCY PERIOD	1 WK																																				
	6 WK																																				

**TAB H**



This is **Exhibit "H"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020

  
.....

Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24

**KMW Energy Inc.**

A - 275 Colborne St.  
London, Ontario N6B 2S7  
Canada

**PURCHASE ORDER**

Order No.: 603933  
Date: 20-Jan-20  
Delivery Date: 23-Dec-20

## Purchased From:

Fincantieri S.p.A.  
Via Genova 1  
34121 Trieste  
Italia

## Ship To:

George River Energy LLC  
53 Ghent Road  
Searsmont, Maine 04973  
USA

Business No.: 895042646

Item No.	Ordered	Unit	Description	Unit Price	Amount
			The following documents shall apply to this Purchase Order in the order of precedence given below: KMW P.O.603933 Fincantieri proposal No. 105 757 - RPLD CG 19-105 Annex 04C - Warranties Annex 05C - Guarantees and applicable LDs		
	1		Steam turbine, including gearbox and base plate	€ 1,895,000.00	€ 1,895,000.00
1			Payment Terms		
2			10% Down Payment upon issuing the Purchase Order		
3			10% upon approval of submittal of technical documents		
4			20% upon arrival of castings and forgings in Riva Trigoso		
5			20% upon successful Mechanical Running Test of the assembled Turbine		
6			10% upon notification of readiness of shipment		
7			10% upon delivery to the GRE site in Searsmont, ME		
			20% at the end of successful Performance Test on site		
			Items 2, 3, 4 and 7; net 30 days. Item 1, 5 and 6; net 5 days. KMW Energy Inc ("KMW") may cancel this Purchase Order at any time prior to submittal of technical documents (Payment Terms, Item No.2) and Fincantieri S.p.A. ("Fincantieri") shall thereupon refund to KMW the Down Payment, but may deduct from such refund Fincantieri's reasonable costs actually incurred for activities to implement this Purchase Order from January 20, 2020 to the date of cancellation. Fincantieri will obtain from a reputable insurance company, and maintain during the applicable warranty period, commercial general liability insurance and a performance bond, each in an amount that covers the respective liabilities of Fincantieri to KMW pursuant to this Purchase Order, and shall provide to KMW certificates evidencing such insurance and bond, and naming KMW as an insured thereunder, within thirty (30) days of the date of this Purchase Order.  Delivery 48 weeks from date of purchase order DAP at GRE site in Searsmont, Maine. Incoterms 2010.		
				<b>Total Amount</b>	€ 1,895,000.00

**FINCANTIERI**

Divisione Navi Militari

Riva Trigoso (GE),

20/12/2019

**KMW ENERGY**

275 Colborne St, London, ON N6B 2S7, Canada

**Kind Att.**Mr. ERIC ROSEN  
CEOMr. ALLEN YANG  
Technical Department**Mechanical System Business Unit (DSCM)**Your Inquiry dated August 20<sup>th</sup>, 2019

Commercial Proposal n° 105 757 – RPLD CG 19-105

Seller ALU (SC-TUV)

Revision n° 1

**CONDENSING AND CONTROLLED EXTRACTION STEAM TURBINE**

The information contained in this document is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon this information by persons or entities other than the intended recipient is prohibited.

**FINCANTIERI S.p.A.**

Via Genova, 1 - 34121 Trieste - Italia

Tel. +39 040 3193111 - Fax +39 040 3192305

Cap. Soc. i.v. € 862.980.725,70 - Uff. Reg. Imp. Venezia Giulia - C.F. 00397130584 P. IVA 00629440322

**DIREZIONE SISTEMI E COMPONENTI MECCANICI**

Stabilimento di RIVA TRIGOSO

Via Erasmo Piaggio, 161 - 16037 Riva Trigoso (GE) - Italia

Tel. +39 0185 4831 - Fax +39 0185 483393 / +39 0185 42307

# FINCANTIERI

Divisione Navi Militari

## Introducing ourselves:

*Fincantieri has been designing and building steam turbines to the highest technical standards for over a century, to meet our clients' various application needs.*

*High performance, reliability and quality are the cornerstones of what we do.*

*Through our long experience, we can offer comprehensive, innovative solutions to the market. We provide energy-generation, mechanical-drive, marine-propulsion and combined-cycle applications.*

*The power systems that we develop are used not just in the marine sector but also in many types of industrial installation, from oil refineries to paper mills, from sugar mills to petrochemical, waste-treatment, biomass and cogeneration plants, in food production and in cement works and steel plants.*

*Our team of engineers performs feasibility studies and detailed planning work to devise the ideal solution for optimum efficiency and value for money.*

## Our product:

*Fully DESIGNED and BUILT in Italy in Riva Trigoso, Fincantieri Steam Turbines combine long experience, state-of-the-art technology and the continuous feed-back and support of our worldwide customers for a non-stop improvement.*

*The Steam Turbine design concept is modular, and it can be customized in each detail according to our customers' requirements with constant support of our engineers and technicians.*

*It means:*

- *Our production is not a series production, but an ON DEMAND one*
- *All of our products could be «tailor made»*
- *We think quality is better than quantity.*

*IMPORTANT NOTE: THE PRESENT COMMERCIAL OFFER IS BASED ON FULLY EUROPEAN SUPPLY (MATERIALS AND COMPONENTS) - DIFFERENT FIGURES CAN BE DISCUSSED AND AGREED*

## 1 TECHNICAL PROPOSAL

With reference to Your kind inquiry dated August 20<sup>th</sup>, 2019, following our site visit and meeting held in Searsmont (ME) on October 3<sup>rd</sup>, 2019 and following mails and communications occurred, we are pleased to submit the present revised quotation that includes the items described in the following documents, which are part and parcel of present proposal:

- **Annex 01T R1:** Technical Proposal as per OM1910500R1 – FC Technical Proposal Index, including OM1910501R1 Technical Specification for Proposal, with relevant attached P&ID's documents.
- **Annex 02T - Spare Parts List**
- **Annex 06T - Annex 06T - KMW GRE Searsmont (ME) Onsite Activities Turbine M**

### 1.1 SCOPE OF SUPPLY

The scope of supply consists of material procurement, manufacturing, shop testing, FCA delivery of one (1) Fincantieri type M **Condensing Geared Steam Turbine with controlled extraction**, fully designed and manufactured at Riva Trigoso workshop (Genoa), according International codes and standards and Fincantieri best practice, **complete with ancillaries** in compliance with indicated standard and norms as described in :

**Annex 01T R1 :** OM1910500R1 and relevant attached documents fully describes the proposed scope of supply concerning Steam Turbine and ancillaries.

### 1.2 SERVICES

- **No-load Mechanical Running Test** at Fincantieri premises in Riva Trigoso (Genoa).

The factory no load mechanical running test is carried out at factory test bench with steam from factory boiler: during this FAT the machine is tested to monitor vibrations, temperatures, pressures and is operated at nominal speed and up to over speed to test mechanical over speed trip device. Purchaser or its representative presence during MRT can be agreed.

- **DAP Delivery at GRE - Robbins Lumber Searsmont ME (USA)**, according Incoterms 2010.



## 1.3 OPTIONS

Options can be agreed and quoted upon request; the following options have been quoted as per § 2.3

- **Option 1 :** **Supervision** to onsite equipment installation , testing and commissioning at Site, including performance test; Supervision will be performed in two shifts for mechanical erection and in extended shift for commissioning phase up to first start-up; Fincantieri will also supervise the final performance test, expected to be performed after start-up within 3 months form installation in a period to be agreed with KMW.
- **Option 2 :** **Customer Personnel Training** on site during turbine commissioning  
One shift of two (2) Days of training sessions each, dedicated to operating and maintenance staff
- **Option 3 :** **Spare parts for Two (2) years of operation** as detailed in attached Annex 02T
- **Option 4:** **Pressure Safety Valve** for Controlled Steam Extraction Line, sized for 100% steam inlet flow, supplied loose.
- **Option 5:** **Additional oil vapour electric extractor** complete with oil mist separator
- **Option 6:** **Electrical equipment and systems, including:** Turbine control panel complete with PLC for turbine digital governing, auxiliary loops, start permissive loops, measures, data acquisition, alarm and shut down logics, Vibration and axial displacement monitor and rack and over speed protection system;
- **Option 7:** **Turbine Spare Rotor** completely bladed, tested and balanced in vertical N2 purged container
- **Option 8:** **Pneumatically assisted Check Valve (Non-return)** for steam extraction line, supplied loose
- **Option 9:** **Separate Oil Console** for lube and control oil system, complete with ancillary equipment as detailed in attached **Annex 01T R1**

**1.4 PERFORMANCES AND CONNECTIONS**

Performances are shown in § 5 of Technical Specification for Proposal OM1910501R1 in attached **Annex 01T R1**, which is based on required data received from KMW.

Main Turbine Connections are shown in § 28 of Technical Specification for Proposal OM1910501R1 in attached **Annex 01T R1**.

Please refer also to OM1911310R1 Preliminary General Arrangement included in **Annex 01T R1** for proposed equipment preliminary outline: please consider this as preliminary proposal document for information, with dimensions for the selected turbine and based on received drawing for existing equipment and concrete existing at site.

**1.5 BATTERY LIMITS**

Please refer to § 23 of Technical Specification for Proposal OM1910501R1 included in **Annex 01T R1**.

**1.6 EXCLUSIONS**

Please refer to § 24 of Technical Specification for Proposal OM1910501R1 included in **Annex 01T R1**.

**1.7 TECHNICAL COMMENTS**

Fincantieri is considering to recover existing equipment to the maximum possible extent: Fincantieri has evaluate to recover existing equipment on site based on received documents and data.

Existing equipment are expected to operate satisfactorily according the data and documentation received and information exchanged, although Fincantieri cannot take any responsibility about these components. However, Fincantieri is open to provide a further site visit and a survey dedicated to specific equipment, to be agreed, should the Customer feel it is necessary.

For example, for turbine and generator control and automation panels, Fincantieri is assuming to recover existing panels at site: however, this is pending because received documents does not corresponds truly with equipment on site and some incongruences have been found.

In a very transparent way, Fincantieri has included in this commercial proposal an optional price for a new turbine control panel, a new oil console and other components, should the recovery of the existing ones result not possible or non-convenient .

However, in order to get the target to ensure the mutual satisfaction of Vendor, Purchaser and Final User, Fincantieri is willing to discuss and agree with KMW about the proposed configuration, in order to find a reasonable configuration sharing the related risk while minimizing additional costs.

## 2 COMMERCIAL PROPOSAL

We're pleased to submit here below commercial conditions for the offer:

Please consider also following annexes as part and parcel of present offer:

- **Annex 03C - Field Service Rates 2019-2020**
- **Annex 04C - Warranty Statement**
- **Annex 05C - Draft of Guarantees and applicable LDs**

### 2.1 **PRICE**

The price for the scope of supply detailed at § 1.1 and 1.2, quoted in Euros, is exclusive of V.A.T. and other taxes or duties:

SCOPE	PRICE (Euro)
<b>N°1 - 8.5 MW CONDENSING GEARED STEAM TURBINE GENERATOR WITH STEAM EXTRACTION AND ANCILLARIES</b> Fincantieri type M and services (§1.1 e 1.2) as detailed in <b>Annex 01T R1</b>	<b>€ 1 895 000,00</b>

### 2.2 **SERVICES**

The above price includes the following services:

- **No-load Mechanical Running Test** at Fincantieri premises in Riva Trigoso (Genoa).
- **DAP Delivery at GRE - Robbins Lumber Seasmont ME (USA)**, according Incoterms 2010

Please refer to following Option 1 for Senior Supervision assistance to equipment Erection as far as for testing and commissioning and Start-up activities, at Site; please notice that relevant prices at present does not include any boarding, lodging and transportation.



## 2.3 OPTIONS

Fincantieri will be pleased to provide Options detailed in § 1.3 at the following conditions:

OPTION	UNIT BUDGET PRICE EACH (EURO)
• <b>Option 1 : Supervision to onsite equipment installation , testing and commissioning at Site, as per Annex 06T</b>	€ 178 000,00 (*)
• <b>Option 2 : Customer Personnel Training on site during turbine commissioning</b>	€ 7 000,00
<b>Option 3 : Spare parts for Two (2) years of operation and Spare Parts for availability guarantee, as detailed in attached Annex 02T</b>	€ 80 000,00
• <b>Option 4: Pressure Safety Valve for Controlled Steam Extraction Line, sized for 100% steam inlet flow, supplied loose</b>	€ 18 000,00
• <b>Option 5: Additional oil vapour electric extractor complete with oil mist separator</b>	€ 12 000,00
• <b>Option 6: Electrical equipment and systems, including: Turbine control panel</b>	€ 75 000,00
• <b>Option 7: Turbine Spare Rotor completely bladed, tested and balanced in vertical N2 purged container</b>	€ 540 000,00
• <b>Option 8: Pneumatically assisted Check Valve (Non-return) for steam extraction line, supplied loose</b>	€ 20 000,00
• <b>Option 9: Separate Oil console for lube and control oil system, complete with ancillary equipment, supplied loose</b>	€ 115 000,00

(\*) Subject to preconditions as per **Annex 06T**; this price does not contain any boarding and lodging and is based on 52 days site activities as listed in the annex . Fincantieri is open to tune these on site serviced together with KMW as necessary.

**2.4 INVOICES AND PAYMENT TERMS**

Payments will be made in accordance with the progress of work and delivery of documentation regarding the scope of the supply subject to the Contract, to be made 30 days from invoices date, except event **no. 1** and **no. 5** and **no.6** which shall be paid at sight.

<b>EVENT</b>	<b>INVOICE EVENT</b>	<b>% OF THE PRICE</b>
<b>1</b>	Upon issuing Purchase Order	10%
<b>2</b>	Upon approval of submittal of technical documents	10%
<b>3</b>	Upon arrival of castings and forgings in Riva Trigoso workshop	20%
<b>4</b>	Upon successful Mechanical Running Test of the assembled STG set (*)	20%
<b>5</b>	Upon notification of readiness of shipment	10%
<b>6</b>	Upon delivery to the GRE site	10%
<b>7</b>	At the end of successful performance test on site	20%

(\*\*) Or alternative test to be agreed

**2.5 DELIVERY PERIOD**

**48 Weeks** from order and complete settlement of technical documents .

**2.6 DELIVERY POINT**

**DAP Delivery at GRE - Robbins Lumber Searsmont ME (USA)**, according Incoterms 2010

This delivery does not include any Customer Clearance and relevant taxes and duties.

**2.7 LIQUIDATED DAMAGES**

Shall be subject to commercial negotiation: however, Fincantieri is in general willing to accept the commercial conditions proposed by KMW: a draft of proposed figures is detailed in **Annex 05C - Draft of Guarantees and applicable LDs**.

**2.8 WARRANTY**

Please refer to **Annex 04C - Warranty Statement** for draft of proposed guarantees

**2.9 VALIDITY**

The offer is valid for 30 days.

**2.10 COMMENTS**

The supply will be subject to a Contract to be drawn up between the Parties, which will indicate in detail the scope of supply and all commercial clauses.

**FINCANTIERI S.p.A.**  
**MECHANICAL SYSTEM AND**  
**COMPONENTS BUSINESS UNIT**

## Annex 04 C - WARRANTIES

(Steam Turbine Set = Condensing and Controlled extraction steam turbine complete with step down gear unit, auxiliaries and ancillaries included in the agreed scope of supply as detailed elsewhere in the Contract)

### Art. 1. WARRANTIES

#### Art. 1.1 Mechanical Guarantee

a) The Seller guarantees that the Steam Turbine Set to be supplied by the Seller shall be new and free from defects, and shall be of good workmanship and materials, in accordance with North American Technical Specifications (Including but not limit to ASTM A 356 standard, API 612 etc.) and shall, under normal operation, meet the performance requirement as defined in Performance Datasheet and show no defect due to materials or workmanship.

b) The Seller's obligations for each Steam Turbine Set under related to the aforesaid Mechanical Guarantee' warranties shall be effective for twenty four (24) months from the date of first startup, but in any case not later than thirty (30) months from the date of the relevant shipment of such Steam Turbine Set (the "Warranty Period"), whichever comes first.

If, during the Warranty Period, the Buyer discover a defect of the Steam Turbine Set, Buyer shall promptly report such non-conformance to Fincantieri during the above-mentioned Warranty Period. Fincantieri shall at its own expense as Buyer's sole and exclusive remedies for breach of the Warranties: (i) for Services, re-perform the relevant Services and (ii) for Product, at Fincantieri's sole discretion, repair or replace the Equipment, or its non-conforming parts, within a reasonable time period. The warranty on repaired or replaced Equipment, Services or parts is limited for a period of one (1) year. (iii) for Software (Software includes but not limited to instructions in machine readable form, necessary programming and documentation etc. in order to achieve proper functionality of the Steam Turbine Set). After notified in writing that the Software fails to conform to the warranty, Fincantieri will at its option and expense correct the non-conformity.

The Buyer shall inform the Seller stating in writing the nature of such defect and the Seller shall, subject to its inspections (at its option) repair, make good, replace or modify the affected part of the Steam Turbine Set. Transportation and installation costs related thereto shall be at Seller's account. The Seller shall have no obligation to repair or replace defects discovered unless written notice thereof is given to the Seller not later than twenty-one (21) business days after the discovery of any defect during the **Warranty** Period.

c) The Seller shall not be responsible and these guarantees shall not apply, if the Steam Turbine Set has been subjected to any of the following:

- Improper storage or handling at site, incorrect or negligent operations or improper maintenance after installation.
- Any alteration made other than with the consent of the Seller.
- Normal wear and tear of the Steam Turbine Set.

- d) The warranties and guarantees provided for under this Art. 1.1 shall be the exclusive warranties and guarantees given by Seller in respect of defects and shall apply in lieu of any warranties and guarantees which may be implied by law, trade practice or otherwise, including any implied warranty of merchantability, satisfactory quality or fitness for a particular purpose or any statutory warranties.
- e) When a defect in a part of the Steam Turbine Set has been remedied, the Seller shall be liable for defects in the repaired or replaced part under the same terms and conditions as those applicable to the original Steam Turbine Set for a period of one year.
- f) Remedial work shall be carried out at the Site, unless the Seller deems it more appropriate, having regard to the interests of both parties, that the defective part or the Plant is sent to him or a destination specified by him.
- g) The Buyer shall at his own expense provide access to the Steam Turbine Set and arrange for any intervention in equipment other than the Steam Turbine Set, to the extent that this is necessary to remedy the defect.
- h) If the Buyer has given such notice as mentioned in Clause 1.1 (b) and no defect is found for which the Seller is liable, the Seller shall be entitled to compensation for the costs he incurs as a result of the notice.
- i) If the Seller does not fulfil his obligations under this Clause, the Buyer may by notice in writing fix a final reasonable period for fulfilment of the Seller's obligations, which shall not be less than one week. If the Seller fails to fulfil his obligations within such final period, the Buyer may himself undertake or employ a third party to undertake necessary repair work at the risk and reasonable expense of the Seller.

#### **Art. 2.1 Functional Guarantee**

- a) The seller guarantees the good operation of the Steam Turbine Set, as well as providing supervision to the correct Erection and Assembly. The personnel made available for the Erection and Assembly phases must be qualified persons for the operations requested and must follow the indications provided by the supervisors of the Seller.  
The seller will not be responsible for any wrong or incorrect or incomplete operation during the Erection and Assembly that are caused by the inability or inadequate qualification of the personnel or caused by disregarding the clear instructions given by the supervisor of the Seller.
- b) On the basis of the documentation and information received, the Seller guarantees that the new Steam Turbine Set will integrate correctly and meet the performance requirement as defined in Performance Datasheet with the rest of the existing plant, and that the existing components are compatible with the operation of the new Steam Turbine Set. The Seller will not be responsible for any error in the documentation transmitted or otherwise handed over by the Customer or his collaborators in this regard, including any incorrect information received concerning the existing plant.
- c) Any obligation of the Seller for normal wear and tear, natural deterioration, maneuvering errors, overloading, defects and damage caused by improper use or use other than that indicated in the instruction manual by the Customer and his collaborators is excluded.

- d) For other parts for which the Seller, upon request by the Customer, is required to carry out further integration work or revision or modification of the existing components on the system, the manufacturer undertakes to provide a mechanical guarantee only for the replacement components for a period of **twenty-four (24)** months after their replacement and also to guarantee their proper functioning and integration with the rest of the plant.

**Art. 3.1 30.3 Guarantees relating to spare parts**

- a) FINCANTIERI guarantees that spare parts will be available even after the end of the warranty period for a period of 10 years; furthermore, it undertakes in this regard to enforce this guarantee also for spare parts relating to components supplied by its suppliers.



## Annex 05 C

**GUARANTEES AND APPLICABLE LIQUIDATED DAMAGES****05C.1 GUARANTEE FOR LACK OF PERFORMANCES**

Fincantieri guarantees the electrical power produced at generator terminals at the 3 operating points defined, called hereafter (Case 1, Case 2, Case 3) as defined in the Turbine performance table shown at § 5 of Technical Specification for Proposal OM1910501R1 in attached Annex 01T R1

With

P<sub>g</sub> - guaranteed value

P<sub>m</sub> - measured value

P<sub>mcorr</sub> - measured value corrected for operating conditions by Seller correction curves

For each measured value, the tolerance defined by the party in charge of receiving tests corresponding to the accuracy of the measurement chains, will be taken into account.

On the basis of the guaranteed powers given by the Seller for each of the relevant operating cases it is calculated a Guaranteed Average Power (P<sub>gp</sub>) with the following formula:

$$P_{gp} = 0.34 * P_{g \text{ Case 1}} + 0.33 * P_{g \text{ Case 2}} + 0.33 * P_{g \text{ Case 3}}$$

On the basis of the guaranteed powers corrected for each of the operating cases concerned, a Measured Average Corrected Power (P<sub>mcorr</sub>) with the following weighted formula is calculated:

$$P_{mcorr} = 0.34 * P_{mcorr \text{ Case 1}} + 0.33 * P_{mcorr \text{ Case 2}} + 0.33 * P_{mcorr \text{ Case 3}}$$

If the corrected electrical power (after applying the correction curves or formulas) is less than the guaranteed weighted power as a result of the calculations based on the above formulas, the Buyer shall be entitled to liquidated damages calculated as the sum of 1% of the Contract Price of the deficient section of the goods for each complete 1% shortfall against the guaranteed weighted power output

Fincantieri will provide necessary correction curves or correction formulas to allow correction for:

- o Inlet steam conditions (pressure / temperature)
- o Steam inlet flow
- o Steam Extraction flow
- o Steam Extraction pressure
- o Steam Exhaust pressure

The Seller guarantees that the turbine can operate without time limitation in island mode, with a minimum power rating of 750 kWe at the generator terminals, at nominal steam conditions of inlet and exhaust as defined in the Turbine performance table shown as defined in the Turbine performance table shown at § 5 of Technical Specification for Proposal OM1910501R1 in attached **Annex 01T R1**

If the turbine fails to meet any performance level defined in the Contract, FINCANTIERI will be given a reasonable opportunity (90 days) to carry out its own expense any work, which is considered necessary, to achieve the performance level specified in the Contract.

If the performance levels are not achieved in a reasonable time (90 days), the Buyer shall be entitled to liquidated damages, at the rate specified in the Contract, which shall not exceed 20% of the Contract Price.

#### **05C.2 GUARANTEE FOR DELIVERY**

The supply will be delivered DAP Delivery at GRE - Robbins Lumber Searsmont ME (USA), according Incoterms 2010: this delivery does not include any Customer Clearance and relevant taxes and duties.

The guaranteed delivery time is **48 Weeks** from order and complete settlement of technical documents and starting from received first down payment at sight upon issuing Purchase Order.

If after a two-week period, FINCANTIERI fails to meet the delivery date for the equipment, Buyer shall be entitled to liquidated damages for delivery at a rate of 1% per week of delay up to a maximum of 10% of the Contract Price.





**TAB I**

This is **Exhibit "I"**  
to the affidavit of James A. Robbins sworn  
before me this 1st day of May 2020

  
.....

Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24

# Eaton Peabody

Attorneys at Law

David C. Pierson  
dpierson@eatonpeabody.com

100 Middle St., P.O. Box 15235  
Portland, Maine 04112-5235  
Phone 207-274-5266 Fax 207-274-5286  
www.eatonpeabody.com

February 4, 2020

**VIA FEDERAL EXPRESS**

Liberty Mutual Insurance Company  
181 Bay Street  
Toronto, ON M5J 2T3

KMW Energy, Inc.  
c/o Ian Epstein, Esq. (via email)  
c/o Aaron Atcheson, Esq. (via email)

**RE: Performance Bond for Procurement Contract**  
**Bond No. BTDO-150002-016**  
**Principal: KMW Energy, Inc.**

Dear Sirs:

I am writing on behalf of Georges River Energy, LLC ("GRE"), pursuant to paragraph 3.1 of the above-reference bond to notify Liberty Mutual Insurance Company that GRE is considering declaring the Seller, KMW Energy, Inc. ("KMW") in default under the terms of the Procurement Contract between the parties dated December 6, 2016, and to request a conference with Liberty Mutual as the Surety and KMW as the Principal on the Bond to discuss methods to complete performance of the Contract.

GRE notified KMW that it was rejecting acceptance of the turbine provided by KMW as a non-conforming good on May 3, 2019. The project engineer, after input from both parties, determined that GRE's rejection was justified and that the turbine was non-conforming on June 14, 2019. After receiving the engineer's decision, KMW agreed to replace the turbine in accordance with the Contract on or about July 8, 2019.

After agreeing to replace the non-conforming turbine, KMW provided GRE with a preliminary schedule on or about July 14, 2019. The schedule identified the basic phases of the replacement effort, starting with the steps needed to identify possible suppliers for the new turbine, contacting potential suppliers, arranging site visits, soliciting proposals and selecting a supplier, issuing a purchase order, manufacturing and installation time. Based on that schedule, GRE expected that the new turbine would be commissioned and producing power and steam in accordance with the Procurement Contract no later than December 31, 2020.

That schedule was predicated on placing an order for the replacement turbine by October 17, 2019. The parties subsequently extended the time to place the turbine on order to November 15, 2019. By that time, the parties had narrowed the list of potential turbine suppliers to two.

Page 2  
February 4, 2020  
Liberty Mutual Insurance Co.  
KMW Energy, Inc.

Subsequent review of the two proposals by GRE's engineering consultants determined that only the proposal from Fincantieri complied with the contract requirements. KMW eventually issued a purchase order to Fincantieri for the turbine itself on January 20, 2020, but did not include all of the components required under the contract. Subsequent to issuing the purchase order and wiring the required deposit to Fincantieri, KMW has threatened to order Fincantieri to suspend performance and/or cancel the order unless GRE complied with KMW's extra-contractual demands, including reaching a binding interim agreement on GRE's past damage claim on or before February 17, 2020.

As it stands, placing the replacement turbine on order has been delayed by at least three months while GRE's net revenue losses due to the non-conforming turbine are mounting at an estimated rate of between \$28,000 and \$47,000 per week, depending on production levels. GRE's losses will continue until the replacement turbine is up and running. These are in addition to the losses GRE has already incurred due to periods of no and/or reduced production since the anticipated completion date of October 1, 2018.

Due to the delay in placing the order for the replacement turbine and KMW's threats to either suspend work on the replacement turbine or cancel the order, GRE has concluded that KMW is unable or unwilling to accomplish the replacement as required by the Contract. GRE has reached this point after careful consideration and looks forward to a meeting with KMW and Liberty Mutual at the project site to discuss the method that will be employed to complete work required under the Contract.

Please contact me to make arrangements for the meeting.

Thank you for your prompt attention to this matter.

Sincerely,



David C. Pierson

Cc: Georges River Energy, LLC

**TAB J**

This is **Exhibit "J"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020

  
.....

Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24

<p>Minute of Meeting      02/25-26/2020                      Robbins Lumber</p> <p>OGGETTO                      KICK OF MEETING  <u>Condensing steam turbine type M 8,5 MW</u></p>	<p>DISTRIBUTION</p> <p>participants + Eric Rosen; Allen Yang;  Alden Robbins; Mike Currier; Jim Robbins.</p>
<p>PARTICIPANTS      GRE: Jim Robbins; Catherine Robbins-Halstel  KMW: Jesus Molina  ATS: Bryan Grant  STANTEC: Teresa A.Poussard  JS: Paul Vaulman  FC: Piero Pelle; Luca Amendola; Marco Chiodi; Fabrizio Rombj; Stefano Garibaldi; Davide Rebollini</p>	
OBJECT	DISCUSSED TOPICS
<p><u>COMMERCIAL</u>  <u>ISSUE</u></p>	<p><u>PO GENERAL TERMS</u></p> <p>FC has already sent the general terms of the PO to KMW.  FC need to set the general terms before 28th of February.  FC internal policy states that a contract/PO has to be defined with the Client within one month from the PO issue.  In case of GT undefined/not agreed, the PO will be suspended by FC till the final settlement of GT.  Possible consequence of PO suspension is delay in delivery.</p> <p><u>OPTIONS</u></p> <ol style="list-style-type: none"> <li>1) Option 1 : Supervision as per Annex 06T.  52 days site activities  Price does not contain any boarding and lodging and is based on two shifts.  Supervision for automation is not quoted.  To be set within 15th of April 2020 in order to organize the commissioning time schedule</li> <li>2) Option 2 : Customer Personnel Training on site during turbine commissioning  To be set within 15th of April 2020 in order to organize the training time schedule</li> <li>3) Option 3 : Spare parts for Two (2) years of operation and Spare Parts for availability guarantee, as detailed in attached Annex 02T  To be set within 16th of March 2020 in order to confirm price and delivery at the end of turbine commissioning</li> <li>4) Option 4: Pressure Safety Valve for Controlled Steam Extraction Line, sized for 100% steam inlet flow, supplied loose  To be set within 28th of February 2020 in order to confirm price and delivery with the main equipment</li> </ol>

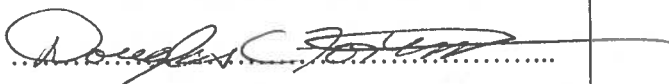
OBJECT	DISCUSSED TOPICS
	<p>5) Option 5: Additional oil vapor electric extractor complete with oil mist separator To be set within 31st of March 2020 in order to confirm price and delivery with the main equipment</p> <p>6) Option 6: Turbine control panel At the moment no automation panels is supplied together with the turbine, as we are considering the recovery of existing control panel, which is currently working correctly as per our understanding In case of panels substitution, confirmation is due within 31st of March 2020 in order to confirm price and delivery with the main equipment.</p> <p>7) Option 7: Turbine Spare Rotor completely bladed, tested and balanced in vertical N2 purged container. To be set within 28th of February 2020 in order to confirm price and delivery at the end of turbine commissioning</p> <p>8) Option 8: Pneumatically assisted Check Valve (Non-return) for steam extraction line, supplied loose To be set within 28th of February 2020 in order to confirm price and delivery with the main equipment</p> <p>9) Option 9: Separate Oil console for lube and control oil system, complete with ancillary equipment, supplied loose To be set within 28th of February 2020 in order to confirm price and delivery with the main equipment</p> <p><u>BONDS AND INSURANCE</u></p> <p>FC hand over during the meeting a draft of the performance and warranty bond text for KMW review. The performance and warranty bond will be 10% of contract value (issued by a primary insurance company). Performance bond will be valid up to one months after delivery on site and warranty bond will be valid up to the end of warranty period (24 months)</p> <p><u>DOCUMENTS</u></p> <p>FC hand over the document list for KMW. Documents list is a reference for 2nd payment term. KMW shall revise documents within 2 weeks from the date of receiving Documents shall be limited to second revision after first issue for modification that have an impact on the design of the scope of supply.</p>
<p><u>TECHNICAL</u> <u>ISSUE</u></p>	<p>10) FC provided a list of documents that will submit to KMW within end of March 2020 in relation of 2<sup>nd</sup> step of payment. FC asked to receive the feedback regarding the above mentioned list of documents within the end of February 2020.</p> <p>11) FC asked if for the new instrumentation the same tags of the existing one shall be used or if new</p>



OBJECT	DISCUSSED TOPICS
	<p>tags have to be generated. KMW will revert first week of March 2020.</p> <p>12) FC will provide documents strictly relevant to its scope of work (lists, P&amp;IDs...). These documents will be provided with Fincantieri templates. Being KMW the full project maker, they will adjust the existing documentation consequently.</p> <p>13) As the received documentation can't be considered 'as built' and as there are some mismatches in between the different documents received, FC is going to take the main measures with its technicians and its Supplier in order to verify together with KMW the goodness of these dimensions indicated in the documents.</p> <p>14) As per beginin February 2020 e-mail, FC would like to know what are the required performances/charateristics of the new ejectors that shall be supplied and what are the motive steam charateristics within end of March 2020.</p> <p>15) FC asked for existing check valve and relevant actuator datasheets within end of February 2020.</p> <p>16) FC will provide a sealing steam injection together with the supply of the turbine.</p> <p>17) FC asked for existing AOP, COP, EOP datasheets and curves (delivery pressure over oil flow rate) within end of February 2020.</p> <p>18) FC asked for generator minimum allowed speed during operation of barring device within end of February 2020.</p> <p>19) As already done, FC asked the LS coupling drawing and datsheet within end of February 2020. This documentation is strictly necessary to propoper positioning turbine and gearbox on metallic baseplate and to complete the purchase order for the gearbox.</p> <p>20) FC, in order to perform the contractual delivery, in its project time schedule has considered 4 days for the custom clearance operation.</p>
<b><u>Attached</u></b>	<ul style="list-style-type: none"> <li>- 2nd step of payment list of documents</li> <li>- TBD</li> </ul>

**TAB K**

This is **Exhibit "K"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020



Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24

**John Giffune**

---

**From:** Rob Ruesch  
**Sent:** Wednesday, April 8, 2020 3:27 PM  
**To:** 'Nancy.Herrmann-Hills@LibertyMutual.com'; Eck, Gretchen  
**Cc:** John Giffune  
**Subject:** KMW Energy; Bond No. BTDO-150002-016

Dear Gretchen and Nancy, I am writing to provide you with an update on the status of this matter. Since Liberty was notified on February 4, 2020, that GRE was considering declaring KMW in default, KMW has failed to demonstrate that it is committed to performing its obligations to provide a turbine that meets the contract requirements. KMW failed to send an appropriate representative to the kick off meeting with Fincantieri during the week of February 24 with authority to make business decisions required to advance the purchase order for the replacement turbine and required spare rotor. At this point, KMW appears to be simply delaying things as much as possible in an apparent effort to avoid paying to fix its mistakes.

As of today, KMW has yet to issue a purchase order to replace the non-conforming steam turbine and associated equipment and support services. Despite repeated requests, KMW has failed to provide any meaningful information about the status of its efforts to negotiate terms and conditions of the purchase order with Fincantieri, the selected turbine manufacturer. KMW has repeatedly, without evidence, blamed Fincantieri for the delay. KMW has recently forwarded the purported text of a "force majeure" notice from Fincantieri that is apparently several weeks old. The precise date and author of the "force majeure" notice are a mystery because KMW has not seen fit to disclose that information. The notice explains that that Fincantieri's works in Italy have been closed. This is no surprise under the circumstances, but the notice fails to explain why contractual terms and conditions cannot be finalized in the meantime.

In addition, KMW has completely failed to respond to (or even acknowledge receipt of) GRE's demand for damages. As you may recall, KMW insisted that this monetary demand was necessary in order to move this process along. The demand was provided to KMW's attorneys on March 2, 2020.

We are writing to let you know that your bond principal's performance has not improved since GRE provided its first notice to you on February 4, 2020. There is an utter lack of urgency on KMW's part. Indeed, two months have passed and GRE's damages continue to accrue with no apparent end in sight. Over the next few days, GRE will evaluate the present status of this matter and determine whether to issue a notice that KMW is in default.

Finally, could you please provide an update as to the surety's investigation into this matter in light of my client's notice letter dated February 4, 2020. We understand that Liberty sent a representative to GRE's facility for the initial meetings with the replacement turbine vendor, Fincantieri. We have not heard anything regarding that site visit.

Thank you. Rob

---

**A. Robert Ruesch** PARTNER

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Portland, ME 04101-4054  
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<http://www.verrill-law.com/a-robert-ruesch/>



**Verrill**

---

**From:** Rob Ruesch  
**Sent:** Monday, February 24, 2020 5:28 PM  
**To:** 'Herrmann-Hills, Nancy' <[Nancy.Herrmann-Hills@LibertyMutual.com](mailto:Nancy.Herrmann-Hills@LibertyMutual.com)>; Eck, Gretchen < >  
**Cc:** John Giffune <[jgiffune@verrilldana.com](mailto:jgiffune@verrilldana.com)>  
**Subject:** RE: KMW / GRE

Hello Nancy and Gretchen, I wanted to follow up on our call from last week to see what the next steps are and if you need anything else from my client at this time. Please let me know if you have time for a call tomorrow. Best regards, Rob

---

**A. Robert Ruesch** PARTNER

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 C (207) 838-7862

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<http://www.verrill-law.com/a-robert-ruesch/>



vCard

**Verrill**

---

**From:** Herrmann-Hills, Nancy [<mailto:Nancy.Herrmann-Hills@LibertyMutual.com>]  
**Sent:** Tuesday, February 18, 2020 1:06 PM  
**To:** Rob Ruesch <[rruesch@verrilldana.com](mailto:rruesch@verrilldana.com)>  
**Cc:** Eck, Gretchen <[Gretchen.Eck@LibertyMutual.com](mailto:Gretchen.Eck@LibertyMutual.com)>; 'Jim Robbins' <[jarobbins@rlco.com](mailto:jarobbins@rlco.com)>  
**Subject:** RE: KMW / GRE

Hi Rob,

We are on the line. Are you having issues trying to join?

Thank you,  
 Nancy

**Nancy E. Herrmann-Hills**  
 Senior Claims Counsel

Surety

Liberty Mutual Canada  
 181 Bay Street, Suite 900  
 Toronto, ON M5J2T3  
 Office: 416.307.4360  
 Cell: 416.230.9056  
[nancy.herrmann-hills@libertymutual.com](mailto:nancy.herrmann-hills@libertymutual.com)  
[www.libertymutualcanada.com](http://www.libertymutualcanada.com)



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---

**From:** Herrmann-Hills, Nancy  
**Sent:** Tuesday, February 18, 2020 11:45 AM  
**To:** Rob Ruesch <[ruesch@verrill-law.com](mailto:ruesch@verrill-law.com)>  
**Cc:** Eck, Gretchen <[Gretchen.Eck@LibertyMutual.com](mailto:Gretchen.Eck@LibertyMutual.com)>; 'Jim Robbins' <[jarobbins@rlco.com](mailto:jarobbins@rlco.com)>  
**Subject:** RE: KMW / GRE

Dear Rob,

Further to our email exchange below, I have sent out the call invite for today at 1pm Eastern Time. Please note that I sent an invite to Jim Robbins however it returned as undeliverable. Kindly forward the call invite to Mr. Robbins.

On behalf of Liberty, I will be on the call along with Doug Dearie.

On behalf of KMW, Gerry Higgins, Mario Leveille, Craig Gauld, Gordon Grimes and Mike Bosse will be on the call.

Thank you,  
 Nancy

**Nancy E. Herrmann-Hills**  
 Senior Claims Counsel  
 Surety

Liberty Mutual Canada  
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[nancy.herrmann-hills@libertymutual.com](mailto:nancy.herrmann-hills@libertymutual.com)  
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---

**From:** Rob Ruesch <[rruesch@verrill-law.com](mailto:rruesch@verrill-law.com)>  
**Sent:** Tuesday, February 18, 2020 9:55 AM  
**To:** Herrmann-Hills, Nancy <[Nancy.Herrmann-Hills@LibertyMutual.com](mailto:Nancy.Herrmann-Hills@LibertyMutual.com)>  
**Cc:** Eck, Gretchen <[Gretchen.Eck@LibertyMutual.com](mailto:Gretchen.Eck@LibertyMutual.com)>; 'Jim Robbins' <[jarobbins@rlco.com](mailto:jarobbins@rlco.com)>  
**Subject:** {EXTERNAL} RE: KMW / GRE

Thanks Nancy. In addition to me and Jim Robbins, Catherine Robbins-Halsted, Aldin Robbins, and Doug Fortin will be on the call. My client representatives will be participating in the call from the same location. If you include Jim on the invite that will be sufficient.

Best regards, Rob

---

**A. Robert Ruesch** PARTNER

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<http://www.verrill-law.com/a-robert-ruesch/>

The Verrill logo, consisting of the word "Verrill" in a bold, serif font, centered within a yellow rectangular background.

---

**From:** Herrmann-Hills, Nancy [<mailto:Nancy.Herrmann-Hills@LibertyMutual.com>]  
**Sent:** Tuesday, February 18, 2020 9:45 AM  
**To:** Rob Ruesch <[rruesch@verrilldana.com](mailto:rruesch@verrilldana.com)>  
**Cc:** Eck, Gretchen <[Gretchen.Eck@LibertyMutual.com](mailto:Gretchen.Eck@LibertyMutual.com)>  
**Subject:** FW: KMW / GRE

Good morning Rob,

I will send out shortly a GRE/KMW/Liberty call invite for today at 1pm EST. As you have requested below, I will include Jim Robbins on the call.

If there are other representatives on behalf of GRE who will participate in the call, please provide me with their name(s).

We are in the process of confirming who on behalf of KMW will participate in the call which will be communicated to you shortly.

If you have any questions, please do not hesitate to contact me.

We continue to reserve our rights under the Bond and at law.

Thank you,  
Nancy

**Nancy E. Herrmann-Hills**

Senior Claims Counsel  
Surety

Liberty Mutual Canada  
181 Bay Street, Suite 900  
Toronto, ON M5J2T3  
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---

**From:** Rob Ruesch <[rruesch@verrill-law.com](mailto:rruesch@verrill-law.com)>  
**Sent:** Monday, February 17, 2020 4:22 PM  
**To:** Eck, Gretchen <[Gretchen.Eck@LibertyMutual.com](mailto:Gretchen.Eck@LibertyMutual.com)>  
**Cc:** 'Jim Robbins' <[jarobbins@rlco.com](mailto:jarobbins@rlco.com)>  
**Subject:** {EXTERNAL} RE: KMW / GRE

Thanks, Please have her include Jim Robbins

[jarobbins@rlco.com](mailto:jarobbins@rlco.com)

**A. Robert Ruesch** PARTNER

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<http://www.verrill-law.com/a-robert-ruesch/>




---

**From:** Eck, Gretchen [<mailto:Gretchen.Eck@LibertyMutual.com>]  
**Sent:** Monday, February 17, 2020 5:18 PM  
**To:** Rob Ruesch <[rruesch@verrilldana.com](mailto:rruesch@verrilldana.com)>  
**Subject:** RE: KMW / GRE

Great! Thank you. Nancy Herrmann-Hills will send out the invite tomorrow morning.



Gretchen A. Eck  
Senior Surety Counsel  
[Gretchen.Eck@LibertyMutual.com](mailto:Gretchen.Eck@LibertyMutual.com)

**Liberty Mutual Surety**  
2815 Forbs Avenue, Suite 102  
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**From:** Rob Ruesch <[ruesch@verrill-law.com](mailto:ruesch@verrill-law.com)>  
**Sent:** Monday, February 17, 2020 4:14 PM  
**To:** Eck, Gretchen <[Gretchen.Eck@LibertyMutual.com](mailto:Gretchen.Eck@LibertyMutual.com)>  
**Subject:** {EXTERNAL} RE: KMW / GRE

Yes. That works. Rob

---

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---

**From:** Eck, Gretchen [<mailto:Gretchen.Eck@LibertyMutual.com>]  
**Sent:** Monday, February 17, 2020 5:00 PM  
**To:** Rob Ruesch <[ruesch@verrilldana.com](mailto:ruesch@verrilldana.com)>  
**Subject:** KMW / GRE

Hi Rob,

Were you able to confirm tomorrow's 1 pm EST meeting with your clients?

Gretchen A. Eck  
Senior Surety Counsel  
[Gretchen.Eck@LibertyMutual.com](mailto:Gretchen.Eck@LibertyMutual.com)

**Liberty Mutual Surety**

2815 Forbs Avenue, Suite 102

Hoffman Estates, IL 60192

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**TAB L**

This is **Exhibit "L"**  
to the affidavit of James A. Robbins sworn  
before me this 1<sup>st</sup> day of May 2020



Notary Public  
Commission expires:

DOUGLAS C. FORTIN  
NOTARY PUBLIC  
STATE OF MAINE  
MY COMMISSION EXPIRES 10-24-24

A. ROBERT RUESCH  
PARTNER  
Admitted in ME, NH and MA  
[rruesch@verrill-law.com](mailto:rruesch@verrill-law.com)  
207-253-4610

One Portland Square  
Portland, Maine 04101-4054  
Main 207-774-4000

March 2, 2020

Michael R. Bosse, Esq.  
Bernstein, Shur, Sawyer & Nelson  
100 Middle Street  
P.O. Box 9729  
Portland, ME 04104-5029

Re: Georges River Energy/KMW Energy, Inc.  
**SETTLEMENT COMMUNICATION**  
**SUBJECT TO RULE FED. R. EVID. 408**

Dear Mike:

We are writing as requested to provide a demand of the relief that our client, Georges River Energy, LLC ("GRE") seeks from your client, KMW Energy, Inc. ("KMW") and, if necessary, KMW's performance bond surety Liberty Mutual ("Liberty"). Fundamentally, GRE's demands are straightforward. First, GRE demands that KMW/Liberty provide a replacement for the Chola steam turbine installed at GRE's facility that performs in accordance with the terms of the parties' contract dated December 6, 2016 ("Contract"). The specific details of requirements to provide a conforming turbine are too lengthy to recite here but at a minimum, the new turbine must meet the design and operating requirements set forth in the Contract. Under the Contract a spare rotor and parts were also required. These must be included in the order to Fincantieri.

Second, GRE demands that KMW/Liberty supply the replacement turbine without delay. Obviously, this is in everyone's best interests as GRE's losses increase with every passing day that the defective Chola turbine continues in operation.

Third, GRE demands that KMW/Liberty compensate it for GRE's ongoing substantial losses incurred due to the non-conforming turbine and associated equipment. All told, GRE's damages due to the failure of the Chola turbine to meet the Contract requirements are in excess \$8.75 million. We have enclosed with this letter a summary of GRE's damages along with various supporting documentation. Please note these damages are on-going and the projected losses are premised on successful installation and startup of the replacement turbine.



Michael R. Bosse, Esq.  
March 2, 2020  
Page 2

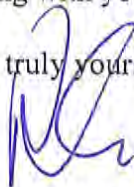
To date, GRE has spent more than \$1.67 million out of its own pocket for engineering, testing, equipment repairs and professional services including attorneys' fees (all of which are expressly allowed under the terms of the Contract) in order to address the failings of the Chola turbine. Assuming that KMW finalizes its purchase order with Fincantieri in the very near future, the forty-eight week lead-time for manufacture and delivery of a new turbine means that the new turbine will not be delivered to GRE until the end of January 2021. GRE estimates that it will incur an additional \$250,000 in out-of-pocket expenses during that period.

In addition to the out-of-pocket costs described above, GRE has experienced operational losses due to the turbine's failure to generate electricity at the level promised by KMW. These operational losses, through the end of December 2020 shall exceed \$3.5 million. GRE's claim for these damages will continue to grow each day that the Chola turbine remains in operation and it is therefore subject to upward adjustment to account for the anticipated date for replacement of the turbine. During the estimated six-month period following delivery of the turbine when the old turbine is removed and replaced with a new Fincantieri turbine, GRE expects to experience losses in excess of \$2.9 million.

In closing, KMW's failure to deliver a conforming turbine has damaged GRE such that it will be difficult for GRE to ever be made whole. GRE's priority at the present time is to ensure that the Fincantieri replacement turbine (together with such spare rotor and parts and qualified engineering and technical support as were initially promised by contract) is ordered promptly and installed without delay. Negotiation and resolution of its claims for damages is, by necessity, a second priority. Put another way, GRE's right to recover money damages and KMW's contractual obligation to deliver a conforming turbine should not be conflated. Notwithstanding this, GRE will entertain a global settlement discussion that honors these priorities.

Please do not hesitate to call me with any questions about the information we have provided with this letter. I look forward to speaking with you.

Very truly yours,



A. Robert Ruesch

ARR:d

Enclosures

cc: Nancy E. Herrmann-Mills, Esq. (via e-mail)  
Gretchen Eck, Esq. (via e-mail)  
Asha Echeveria, Esq. (via e-mail)  
Gordon Grimes, Esq. (via e-mail)  
Mr. Jim Robbins (via e-mail)

**GRE/KMW Contract and Claims Summary**  
**(as of 3/2/2020)**

<b>Contract Price</b>	<b>\$12,825,000.00</b>	
<b>Change Orders 1 through 10</b>	<b>(\$180,370.07)</b>	<b>Ex. 1</b>
CO # 1 - Lower ESP and Extended Stack	\$7,690.00	
CO # 2 - Sky Vent Valve	\$28,935.00	
CO # 3- Delete VFDs	(\$34,512.00)	
CO # 4 - Changes to Generator Prot and Synch	(\$34,600.00)	
CO # 5 - Spare Parts	\$61,000.00	
CO # 6 - changes to NGR Panel	\$1,898.00	
CO # 7 - N/A	\$0.00	
CO # 8 - NEMF COD freight Farris Safety Valve for CTMI	(\$606.07)	
CO # 9 - Refractory materials for Chamber & Boiler Hoppers	(\$233,175.00)	
CO # 10 - Canty process ultra High Temp Camera for Furnace	\$23,000.00	
<b>Contract Price Adjusted by Agreed Change Orders</b>	<b>\$12,644,629.93</b>	
<b>Payments to Date</b>	<b>(\$10,284,127.32)</b>	<b>Ex. 2</b>
<b>Contract Balance</b>	<b>\$2,360,502.61</b>	
<b>Claims</b>	<b>(\$8,467,968.05)</b>	
CO # 11 - Out of Pocket Back Charge through 10/15/2019	(\$1,397,786.97)	<b>Ex. 3</b>
CO # 11B - Out of Pocket Back Charge 10/16/2019 - 12/31/2019	(\$81,749.45)	<b>Ex. 4</b>
CO # 12 - Out of Pocket Back Charge through 10/15/2019	(\$149,573.01)	<b>Ex. 5</b>
CO # 12B - Out of Pocket Back Charge 10/16/2019 - 12/31/2019	(\$39,644.06)	<b>Ex. 6</b>
CO # 12C - Out of Pocket Back Charge 1/1/2020 - 1/31/2020	(\$3,139.50)	<b>Ex. 7</b>
Additional Out of Pocket Costs through 1/29/2021 (estimated)	(\$250,000.00)	
Liquidated Damages	(\$103,500.00)	<b>Ex. 8</b>
Net Revenue Losses During Shutdown	(\$2,930,434.00)	<b>Ex. 9</b>
Operational Losses - 2019	(\$2,133,530.93)	<b>Ex. 10</b>
Operational Losses - 2020	(\$1,378,610.13)	<b>Ex. 10</b>
<b>Balance Due KMW Energy/(Due GRE)</b>	<b>(\$6,107,465.44)</b>	

# Ex. 1



**KMW Change Orders**

1. Lower ESP and Extended Stack	\$7,690.00
2. Sky Vent Valve	\$28,935.00
3. Delete VFD's	(\$34,512.00)
4. Changes to Generator Prot and Synch	(\$34,600.00)
5. Spare Parts	\$61,000.00
6. Changes to NGR Panel	\$1,898,.00
7. (none)	
8. NEMF COD freight Farris Safety Valve for CTMI	(\$606.07)
9. Refractory materials for Chamber & Boiler Hoppers	(\$233,175.00)
10. Cauty Process Ultra High Temp Camera for Furnace	\$23,000.00

# Ex. 2

# GEORGES RIVER ENERGY

## PAYMENTS ISSUED TO KMW THROUGH 01/10/2020

### Wire Reference # /

Check #	Vendor	Vendor Name	Date	Amount	Payment Reference
2699105-WIR	KMW	KMW ENERGY INC	10/18/16	\$50,000.00	Engineering
2699121-WIR	KMW	KMW ENERGY INC	10/19/16	\$50,000.00	Engineering
2750636-WIR	KMW	KMW ENERGY INC	11/09/16	\$100,000.00	Engineering
2800055-WIR	KMW	KMW ENERGY INC	12/02/16	\$100,000.00	Engineering
				<b>\$300,000.00</b>	<b>Engineering Total</b>
2835979-WIR	KMW	KMW ENERGY INC	12/16/16	\$1,282,500.00	Contract
2863628-WIR	KMW	KMW ENERGY INC	12/30/16	\$1,923,750.00	Contract
2976659-WIR	KMW	KMW ENERGY INC	02/17/17	\$1,026,000.00	Contract
3010360-WIR	KMW	KMW ENERGY INC	03/03/17	\$513,000.00	Contract
3088306-WIR	KMW	KMW ENERGY INC	04/06/17	\$387,826.00	Contract
3341011-ACH	KMW	KMW ENERGY INC	07/21/17	\$510,853.72	Contract
3425016-ACH	KMW	KMW ENERGY INC	08/25/17	\$1,282,711.30	Contract
3485265-ACH	KMW	KMW ENERGY INC	09/21/17	\$143,835.03	Contract
3545864-WIR	KMW	KMW ENERGY INC	10/13/17	\$500,000.00	Contract
3597505-WIR	KMW	KMW ENERGY INC	11/03/17	\$282,819.05	Contract
3615497-WIR	KMW	KMW ENERGY INC	11/15/17	\$64,277.06	Contract
3643088-WIR	KMW	KMW ENERGY INC	11/22/17	\$785,541.10	Contract
3662214-WIR	KMW	KMW ENERGY INC	12/01/17	\$128,554.11	Contract
3717743-WIR	KMW	KMW ENERGY INC	12/22/17	\$141,409.53	Contract
3801081-WIR	KMW	KMW ENERGY INC	01/25/18	\$282,819.05	Contract
3837524-WIR	KMW	KMW ENERGY INC	02/12/18	\$192,831.17	Contract
3946734-WIR	KMW	KMW ENERGY INC	03/26/18	\$424,228.56	Contract
4165627-WIR	KMW	KMW ENERGY INC	06/19/18	\$102,843.28	Contract
4187583-WIR	KMW	KMW ENERGY INC	06/25/18	\$308,328.36	Contract
				<b>\$10,284,127.32</b>	<b>Contract Total</b>
				<b>\$10,584,127.32</b>	<b>Grand Total</b>

# Ex. 3

## NOTICE OF CHANGE

<b>Owner</b>	Georges River, LLC 53 Ghent Road Searsmont, Maine 04973 U.S.	<b>NOC 1684-11</b>  October __, 2019
<b>Seller</b>	KMW Energy, Inc. 635 Wilton Grove Road London, Ontario N6N 1N7 Canada	
<b>Contract</b>	Agreement between Buyer and Seller for Procurment Contracts dated December 16, 2016	

**The Contract is Modified by this Change Order to reflect the following Change(s):**

The changes are described on Exhibit A, attached hereto  
The changes do not affect the Contract Time

<b>Original Contract Price (USD)</b>	\$ 12,825,000.00
<b>Previous Change Orders (1 - 10)</b>	\$ <u>(170,571.59)</u>
<b>Contract Price Prior to this Change Order</b>	\$ 12,654,428.41
<b>This Change Order</b>	\$ <u>(1,397,786.97)</u>
<b>Revised Contract Price</b>	\$ 11,256,641.44

**Approved by:**

**Buyer:**

\_\_\_\_\_  
Georges River Energy, LLC

By: \_\_\_\_\_

Its: \_\_\_\_\_

**Seller:**

\_\_\_\_\_  
KMW Eenergy, Inc.

By: \_\_\_\_\_

Its: \_\_\_\_\_

## Exhibit A to NOC 1684-11

**KMW Back Charges for GRE Out of Pocket Expenses as of October 15, 2019**

The attached list reflects back charges for GRE's out of pocket expenses totaling \$1,397,786.97 as of October 15, 2019. This list does not include, and should not be construed as a waiver of, back charges for similar costs that GRE may incur after said date or has not yet received invoices for or the right to recover of any other type damages specifically including, but not limited to, consequential damages, which rights are expressly reserved.

<u>Supplier</u>	<u>Date</u>	<u>Invoice</u>	<u>Amount</u>	
AC ELECTRIC CORP	06/27/19	63224	\$2,236.00	1 SPIKE TEST, REBUILD, REWIND FOR VFD, 25HP,APEX, MOTOR, ND 18
Advanced Hydraulics	10/29/18	3540	\$1,500.00	Consulting & Troubleshooting on lube oil skid & graye hydraulic stem
Advanced Hydraulics	10/29/18	3541	\$684.00	Hydac temperature switch
Advanced Hydraulics	10/29/18	3541	\$60.00	Hydac ZBE 08-05
Advanced Hydraulics	10/29/18	3541	\$27.20	Freight on Hydac components
Advanced Hydraulics	10/30/18	3536	\$693.00	Relief Value Lube Oil, FULSLO (2)
Advanced Hydraulics	10/30/18	3536	\$88.00	Expedited charge
Advanced Hydraulics	10/30/18	3536	\$540.00	Sun Hydraulics RPGC-LDN-CAE Control Pressure Relief 25-800 (2)
Advanced Hydraulics	10/30/18	3536	\$204.61	UPS Red
Advanced Hydraulics	10/30/18	3537	\$306.83	2-way, direct acting, solenoid
Advanced Hydraulics	11/07/18	3526	\$305.01	2-way, direct acting, solenoid
Advanced Hydraulics	11/07/18	3546	\$283.00	Sun Hyd DTDAMCN-GAL 2-way, direct acting, solenoid
Advanced Hydraulics	11/07/18	3547	\$395.00	ACT Customer 2 floats & temp switch; GRE20171
American Power Services	01/31/19	4458	\$3,750.00	(3) Rush - open bore customer supplied housings; (2) Rush - thrust shoe inspection
American Power Services	02/01/19	4460	\$650.18	Repair 3 inactive thrust shoes

American Power Services	03/19/19	4488	\$871.11	45mm inactive thrust shoes (4)
American Power Services	04/22/19	4521	\$3,704.01	(2) 140mmx85mm bearing liner
Bearings Plus	01/29/19	18314	\$4,490.00	(1) R5385H01 Front Liner Bearing, (1) R5384H01 Front Liner Bearing
CARDMEMBER SERVICE	03/26/19	CC Statement 03/2019	\$20.05	Alan Storm - Jim purchased shaving cream at Dollar General for Alan to find vacuum seal loss on turbine
CARDMEMBER SERVICE	02/26/19	CCSTMT-02-2019	\$44.85	3 FLEXITALLIC GASKET, 1", 1500#
CARDMEMBER SERVICE	02/26/19	CCSTMT-02-2019	\$31.90	1 FUSES, 10 AMP, LOW PEAK, 600 VAC, A21, 10/BOX
CARDMEMBER SERVICE	02/26/19	CCSTMT-02-2019	\$164.40	1 SETRA PRESSURE TRANSMITTER, MODEL 256, 0-100 PSIG, 24VDC, 4-
CARDMEMBER SERVICE	03/26/19	CCSTMT-03-2019	\$207.92	1 SENSOR, SONAC, DELAVAN
CARDMEMBER SERVICE	03/26/19	CCSTMT-03-2019	\$400.50	1 PH PROBE FOR RO
CARDMEMBER SERVICE	04/24/19	CCSTMT-04-2019	\$711.00	1 LINEAR POSITIONER FOR TURBINE ESV VALVE
CARDMEMBER SERVICE	05/29/19	CCSTMT-05-2019	\$17.92	1 2"X5' TUBULAR BRAIDED TINNED COPPER WIRE GROUND STRAP
CARDMEMBER SERVICE	08/27/19	CCSTMT-08-2019	\$2,467.84	1 DODGE 4 BOLT FLANGE BEARING, 3-15/16" FOR STOKER SCREW #1
CARDMEMBER SERVICE	09/24/19	CCSTMT-09-2019	\$2,342.27	1 BEARING, 4 BOLT FLANGE, 2-3/16, STOKER SCREW
CASCO Systems	03/21/19	3499	\$9,378.84	50% - AVR Work - remainder to be paid upon completion of Sync Panel
CENTRAL MAINE POWER CO	01/22/19	700000112371	\$29,304.67	220,356 kWh for 12/20/18 - 01/18/19
CENTRAL MAINE POWER CO	02/27/19	708000426773	\$16,089.41	105,599 kWh for 01/19/19 - 02/20/19
CENTRAL MAINE POWER CO	03/25/19	708000449707	\$33,047.21	246,471 kWh for 02/21/19 - 03/20/19
CENTRAL MAINE POWER CO	05/21/19	717000467993	\$16,440.04	Electricity supply and delivery
CENTRAL MAINE POWER CO	06/20/19	700000159023	\$141.37	4939 KWH - 05/21/19-06/20/19 DELIVERY CHARGE
CENTRAL MAINE POWER CO	06/20/19	700000159023	\$359.61	4939 KWH - 05/21/19-06/20/19 SUPPLY CHARGE

CENTRAL MAINE POWER CO	07/19/19	712000539099	\$153.80	6373 KWH - 06/20/19-07/19/19 DELIVERY CHARGE
CENTRAL MAINE POWER CO	07/19/19	712000539099	\$463.31	6373 KWH - 06/20/19-07/19/19 SUPPLY CHARGE
CENTRAL MAINE POWER CO	08/22/19	702000595968	\$213.33	20010 KWH - 07/20/19-08/20/19 DELIVERY CHARGE
CENTRAL MAINE POWER CO	08/22/19	702000595968	\$1,466.00	20010 KWH - 07/20/19-08/20/19 SUPPLY CHARGE
CENTRAL MAINE POWER CO	09/24/19	701000699724	\$224.76	22885 KWH - 08/21/19-09/20/19 DELIVERY CHARGE
CENTRAL MAINE POWER CO	09/24/19	701000699724	\$1,616.90	22885 KWH - 08/21/19-09/20/19 SUPPLY CHARGE
Chris Kulbe	04/04/19		\$682.77	Expenses for 04/01/19 & 04/02/19 to pick up Eurodrive gearmotor in NJ
CIRCOR	12/12/18	CD 25470	\$13,035.00	Emergency water and particle removal
COASTAL STEEL	03/25/19	4678	\$315.00	6 - ALUMINUM RUPTURE DISC FOR TURBINE, 1/32" THICK, 16-1/2" DIA
COASTAL STEEL	05/03/19	4738	\$1,037.00	2" Round AISI 1144 Rod (1) - 144" & (1) - 20"; DOM 2-/34OD x 3/8 wall 20'; to replae rod in combustion chamber
DEREK A. WHITE (WHICO)	10/27/18	1859	\$487.27	Work on Lube Oil pump
DEREK A. WHITE (WHICO)	11/26/18	1867	\$337.78	Fuel Bin Screw Modifications
DEREK A. WHITE (WHICO)	12/03/18	W.E 12/01/2018	\$186.66	4 Hours Turbine gearbox guard
DEREK A. WHITE (WHICO)	12/10/18	W/E 12/08/18	\$116.14	2.5 hours turbine steam leak deflector
DEREK A. WHITE (WHICO)	01/08/19	W/E 01/06/19	\$176.00	4 hours working on oil skid baffles
DEREK A. WHITE (WHICO)	02/04/19	W.E. 02/02/19	\$183.33	4 hours turbine lp shims and gearbox shims
DEREK A. WHITE (WHICO)	02/11/19	W.E. 02/08/19	\$22.34	0.5 hours for 3/4x2x4 Spacer blocks



DEREK A. WHITE (WHICO)	02/18/19	WE2/16 JOB 1885	\$245.44	6 GRE 2 BELT TRACKING/KMW WET ASH DRAG CHAIN 1 HOUR
DEREK A. WHITE (WHICO)	02/25/19	W.E 02/23/19	\$439.82	9.5 hours Generator bearing cap seals
DEREK A. WHITE (WHICO)	03/04/19	W.E 03/02/19	\$276.36	6 Hours Lube oil pump/motor base
DEREK A. WHITE (WHICO)	03/11/19	W.E 03/09/2019	\$90.93	2 Hours Turbine govenor proximity switch bracket
DEREK A. WHITE (WHICO)	03/25/19	W.E 03/23/2019	\$222.86	5 Hours Extraction valve proximity bracket, wet ash conveyor water fill
DEREK A. WHITE (WHICO)	04/08/19	W.E. 04/06/18	\$566.40	12 Hours - #3 Stocker screw gearbox and screw flight
DEREK A. WHITE (WHICO)	04/15/19	W.E. 04/15/19	\$278.20	Fly ash screw auger, Grate cooling pump seals
DEREK A. WHITE (WHICO)	04/29/19	W.E. 04/27/19	\$1,560.70	33 hours - #1 & #2 stocker screw flight combuster asj screw coupling bolts, #13 grate shaft
DEREK A. WHITE (WHICO)	05/03/19	WE5/4 JOB1898	\$45.68	1 WET ASH DRAG CHAIN
DEREK A. WHITE (WHICO)	05/20/19	W.E. 05/18/19	\$337.61	HOURS Gly Ash Rotary locks out, wet ash conveyor
DEREK A. WHITE (WHICO)	05/27/19	W.E. 05/25/19	\$46.21	1 Hour lube oil tank mist filter
DEREK A. WHITE (WHICO)	06/03/19	W.E. 06/12/19	\$66.50	1.5 hours to remove lube oil pump motor
DHL Express	04/20/18	D11412547	\$201.52	Governor shipping
DHL Express	07/18/18	KeyBank CC	\$200.28	Chola Supplies
FedEx	04/02/18	1-676-49025	\$396.68	Shipment from Lufkin - Coupling Hub
FW Webb	12/13/18	61084509	\$7,376.64	(2) Close coupled pump & motor
FW WEBB / SEVCO INCORPORATED	08/22/19	64024535	\$1,125.00	1 SET EXTRACTION SAFETY VALVE TO 80#. IN PLACE PER QUOTE 8519D
Governor Control Systems	12/21/18	147710	\$72,800.63	Alberto Carvalho Oct 28 - Nov 6, Nov 10 - 22, labor, travel, expenses
Governor Control Systems	12/21/18	147711	\$45,594.67	Alberto Carvalho Nov 25 - Dec 8, labor, travel, expenses

Governor Control Systems	02/20/19	148799	\$20,616.89	Recalibratate actuators after 2" shims added per CTMI
Governor Control Systems	05/30/19	150835	\$12,658.44	David Lynch - tune HP & LP extraction on turbine, fine tune load rejection
GTE, LLC	01/09/19	3036945	\$38,702.84	(2) Viking 495 pump, 4" flanged w/ 25HP 1150 RPM motor, (2) Viking 495 pump, 2.5" FNPT ports w/10HP 1150 RPM moto, statis mist eliminator, demister cartridge
GTE, LLC	01/09/19	3036945	-\$1,597.00	Returned Mist Eliminator
HBC	11/16/18	4439	\$348.01	Fab filter rack for oil skid vent; GRE20185
Hilliard	05/02/19	482099	\$4,582.95	Mist eliminator to replace one not working on lube oil skid
Horizon Solutions	10/10/18	4875585-00	\$10,214.85	HPU Heater Buckets
Horizon Solutions	10/10/18	4875585-00	\$10,214.85	MCC HPU Heater Buckets (3); GRE20160
Horizon Solutions	11/21/18	4894080-00	\$2,830.00	RSLogix 500 Standard Edition Software
Horizon Solutions	11/26/18	4893675-00	\$8,685.97	Powerflec 525, 20HP VFD expedited
Horizon Solutions	12/06/18	4900314-00	\$1,390.51	(5) MCB Supplementary Protector, fuse holder, BUS Bar connector 50MM, BUS Bar Connector 35MM
Horizon Solutions	12/10/18	4900314-02	\$167.80	(10) Bus Bar Connector 35MM straight lug
Horizon Solutions	01/04/19	4905884-00	\$13,725.25	Controllogix 10 slot chassis, Guardlogix 5580 controller, Controllogix: ENET/IP 2 port module, (7) 36 Pin Screw terminal block, 8 PT A/O I or V Module, and Guard I/O 16 Port
Horizon Solutions	01/09/19	4905884-03	\$1,330.82	(2) NEMA 600V Safety Relay DC Coil AB-700SDCP
Horizon Solutions	01/15/19	4905884-01	\$1,421.26	(1) A-B179 Guard I/O 16 port digital I/O
Horizon Solutions	01/15/19	4907915-00	\$22,230.38	(2) A-B2163UB 25HP PF753 MCC Bucket Lube Oil pimp 1 & 2
Horizon Solutions	01/25/19	4914958-00	\$973.41	(2) NEMA 600V Safety Relay DC Coil AB-700SDCP for electical panel for conversion of AC to DC
Industrial Controls	09/20/18	7120687	\$4,084.13	Honeywell Smartline transmitter (2); GRE10065
Industrial Controls	09/21/18	7121414	\$2,522.85	Smartline Transmitter
Industrial Controls	12/05/18	7153405	\$619.08	(3) Ashcroft 4-1/2" gauge, 45 1279SS 04L VAC & 30, expedited delivery

Industrial Controls	01/15/19	7167846	\$584.70	(3) Ashcroft 4-1/2" dial process gauge; (3) 1/2 1098S grade SIPHO XHSML pigtail
Industrial Controls	01/18/19	7169410	\$143.36	(3) 1/2" Needle vlve, SS body
Industrial Packing	03/14/19	357496	\$145.36	6 - 14-1/8x19-3/8x1/16 full face gasket
JMP	10/11/18	Phase 1	\$2,030.00	John Miller - Ran primary air fan combustion chamber hyd power units, problem with grate hydraulics
JMP	10/12/18	Phase 1	\$1,812.50	John Miller - more testing on HPU and grate solenoids, testing of DLR network
JMP	11/02/18	Phase 1	\$2,175.00	Startup Support, failed to start system, manual override logic to support startup, review all failed logic & work with KMW to resolve issue
JMP	11/03/18	Phase 1	\$2,320.00	John Yeung - West ash conveyor jam, review & program wet ash with proper sequencer; start system up in startup mode, failed, review & update all operation mode based; review & update motor start logic based on revised operation mode
JMP	11/05/18	Phase 1	\$2,175.00	John Yeung - Update overview screen; Review/Re-design master start/stop screen; Troubleshoot wet ash conveyor and transfer conveyor fault
JMP	11/06/18	Phase 1	\$1,305.00	John Miller - worked with Hanamt on I/O checkout
McMaster-Carr	09/17/18	73579875	\$681.10	Gauges. Thermometer, thermowell (paid for by Robbins, Robbins billed GRE)
McMaster-Carr	01/31/19	85309598	\$264.39	7 MISTING NOZZLE, FULL CONE SPRAY, BRASS, 1/4 NPTM, 2.2 GPH @
McMaster-Carr	03/14/19	89202402	\$26.93	18-8 SS Shims - 3 packs
McMaster-Carr	03/15/19	89357943	\$103.07	0.032"x18"x18" Aluminum Sheet
McMaster-Carr	03/18/19	89420273	\$156.05	8 - high-temp gasket for 1 pipe size, 4 - for 1-1/2 pipe, 8 - for 1/2 pipe, 8 for 2 pipe; 1 pack SS washers for 7/16" and 3 packs SS washers for 5/8" screw size
MILLENNIUM POWER SERVICES	12/04/18	19345	\$2,968.39	(2) STI/ATI Thermowell, (1) Ashcroft Duragauge 45-600B-02(AT), (1) Ashcroft Duragauge 45-600B-0(AR), UPS Red
MILLENNIUM POWER SERVICES	05/24/19	20137	\$1,828.50	Emergency repair of Consolidated 2700 series SH safety valve; 2 men and travel

MILLENNIUM POWER SERVICES	06/27/19	20288	\$768.00	8 HRS FIELD SERVICE SUPERVISOR-AVK TEST
MILLENNIUM POWER SERVICES	06/27/19	20288	\$720.00	8 HRS FIELD SERVICE TECH-AVK TEST
MILLENNIUM POWER SERVICES	06/27/19	20288	\$237.50	0.5 DAILY RENTAL OF AVK MACHINE
MILLENNIUM POWER SERVICES	06/27/19	20288	\$108.00	72 MILES-1 TRUCK #45 ROUND TRIP
MILLENNIUM POWER SERVICES	06/27/19	20288	\$216.25	1 LOWERRING PIN FOR CONSOLIDATED 2716D, P/N-VP813E
MILLENNIUM POWER SERVICES	06/27/19	20288	\$23.79	1 SHIPPING
NAPA AUTO PARTS BELFAST	04/26/19	32733	\$26.44	2 BATTERY WOVEN GROUND CABLE, 17 " (TURBINE) - BH-EQUI-GEN
NE Motor Freight	05/25/18	26401321	\$606.07	Safety Valve Freight (North American Safety Valve)
Omega Engineering	11/16/18	C643500	\$933.00	Lineat Positioner for Turbine ESV Valve
Omega Engineering	04/11/19	SC0042424	\$711.00	Lieat positioner ESV valve with freight, purchased on credit card
PROGRESS ENGINEERING LLC	08/06/18	3487	\$3,708.01	RTD related
PROGRESS ENGINEERING LLC	10/08/18	3539	\$2,175.00	KMW Rework issues
PROGRESS ENGINEERING LLC	10/15/18	3546	\$3,624.14	RTDs, AB 1734 I/O, panel supplies, delivery and mileage
PROGRESS ENGINEERING LLC	12/06/18	3579	\$37,220.86	rework issues - helping other contractors on site, Control Infotech from 10/15/18 - 11/29/2018
PROGRESS ENGINEERING LLC	01/15/19	3600	\$13,593.75	93.75 hours supporting KMW equipment and/or contractors between 12/01/18 - 01/05/19
PROGRESS ENGINEERING LLC	01/15/19	3600	\$72.88	(2) Omega twist lock connectors for TCP

PROGRESS ENGINEERING LLC	02/05/19	3607	\$37,720.77	January KWM/Rewok issues: TCP PLC changeout and turbine run, new lube oil pumps VFD install, turbine PLC, PF monitor & AVR, analog output for Governor isolation hardware, black box wizard display, rack mounting kit
PROGRESS ENGINEERING LLC	03/07/19	3647	\$12,506.69	01/29/19 - 02/28/19: TCP lead/lag monitors; work with GCS; turbine startup;turbine bearing RTD; turbine citect; Hart module, Wago 3, AB term block
PROGRESS ENGINEERING LLC	04/10/19	3669	\$9,669.52	03/05/19 - 04/07/19: turbine PLC changes, meeting with Jim & Kevin, review man sync panel & 52T1 breaker prints;shut down man sync panel, lube oil pump comm, turbine online, stoker #3 gear motor, address TCP temp alarms, extraction loop tuning
PROGRESS ENGINEERING LLC	04/29/19	3677	\$1,044.58	(8) - Temp specialists RTDs
PROGRESS ENGINEERING LLC	05/13/19	3698	\$6,104.56	review code with gcs, assist wuth control of oil pumps, turbine services. Turbine Citect SCADA work, allocated mileage
PROGRESS ENGINEERING LLC	07/29/19	3743	\$195.00	1.5 GETTING EVENT LOG OUT OF TURBINE CONTROL PLC
PROGRESS ENGINEERING LLC	07/29/19	3743	\$1,275.00	8.5 ON SITE, TURBINE TRIPLOG, KWM REWORK
PROGRESS ENGINEERING LLC	07/29/19	3743	\$900.00	6 ON SITE, AVR INVESTIGAION
PROGRESS ENGINEERING LLC	07/29/19	3743	\$900.00	6 ON SITE, STEAM TURBINE ALARMS, KMW REWORK
PROGRESS ENGINEERING LLC	07/29/19	3743	\$525.00	3.5 ON SITE, CITECT ZERO SPEED BYPASS ON TURBINE
PROGRESS ENGINEERING LLC	07/29/19	3743	\$390.00	3 ON SITE, SCADA PROGRAMMING SCREENS RELATED TO TURBINE CONTRO
PROGRESS ENGINEERING LLC	07/29/19	3743	\$975.00	6.5 TURBINE CONTROL PROJECT MOTOR LOAD TREND, WORK ON CITECT
PROGRESS ENGINEERING LLC	08/05/19	3749	\$375.00	2.5 MEETING WITH TCP PUNCHLIST

PROGRESS ENGINEERING LLC	08/05/19	3749	\$1,425.00	9.5 ON SITE WORK ON TURBINW CITECT ALARMS SETPOINTS; ELECTROSTAT
PROGRESS ENGINEERING LLC	08/05/19	3749	\$300.00	2 ELECTROSTATIC PRECIPITATOR TRENDRING
PROGRESS ENGINEERING LLC	08/05/19	3749	\$1,725.00	11.5 ON SITE WORK O TURBINW CITECT ALARM SETPOINTS; ELECTROSTATIC
PROGRESS ENGINEERING LLC	08/05/19	3749	\$159.69	MILEAGE
PROGRESS ENGINEERING LLC	08/06/19	3750	\$1,375.08	ALLEN BRADLEY XLS POWER SUPPLIES
PROGRESS ENGINEERING LLC	08/06/19	3750	\$15.23	INBOUND SHIPPING
PROGRESS ENGINEERING LLC	08/06/19	3750	\$69.50	PHENOLIC TAGS FOR TURBINE CONTROL PANEL
PROGRESS ENGINEERING LLC	08/06/19	3750	\$14.90	INBOUND SHIPPING
PROGRESS ENGINEERING LLC	08/12/19	3765	\$2,838.00	ETHERNET/IP TO MODBUS TCP CONVERTER WITH ETHERNET SWITCH
PROGRESS ENGINEERING LLC	09/17/19	3793	\$172.50	1.5 INSTALLED 2 NEW POWER SUPPLIES AND REDUNDANCY MODULE TO MAT
PROGRESS ENGINEERING LLC	09/17/19	3793	\$1,912.50	12.75 TURBINE SHUTDOWN; MODBUS TCP MODULE FOR AVR CONFIGURED
PROGRESS ENGINEERING LLC	09/17/19	3793	\$900.00	6 ON SITE, FAILED BOILER TT REWORK; STEAM FLOW TRANSMITTER
PROGRESS ENGINEERING LLC	09/17/19	3793	\$400.00	2 ON DEMAND TROUBLESHOOTING AND SERVICE WORK, D. HODGKINS
PROGRESS ENGINEERING LLC	09/17/19	3793	\$230.00	2 ON SITE TO MAKE CHANGES TO BOILER STEAM PRESSURE TRANSDUCER
PROGRESS ENGINEERING LLC	09/17/19	3793	\$53.41	98 DIH MILEAGE
PROGRESS ENGINEERING LLC	09/17/19	3793	\$43.06	79 DIH MILEAGE
PROGRESS ENGINEERING LLC	10/08/19	3814	\$600.00	4 ON SITE AT GRE, PROBLEMS WITH KMW SCADA SPEED

PROGRESS ENGINEERING LLC	10/08/19	3814	\$675.00	4.5 ON SITE WORK ON KMW TRANSMITTER FEEDWATER TAGS
PROGRESS ENGINEERING LLC	10/08/19	3814	\$191.31	TOTAL REIMBURSABLE EXPENSES, D. HODGKINS MILEAGE
RLC Engineering	10/01/18	10538	\$15,360.00	(96) Hours Manual Sunc Panel between 09/04/18 - 09/28/18
SEC America / Shinkawa (credit card)	09/20/18	110eb8j050-01	\$2,158.37	202F Proximity Probe (5) & Expedite fee; GRE20137
SEC America / Shinkawa (credit card)	10/10/18	110EB8K009-01	\$1,108.07	Vibration Sensor, 202F Prox Probe and cable (3) & Expedite fee; GRE20158
Shinkawa	11/28/18	118139PP	\$4,944.00	VM-7B Power supply (2) Slots P1 & P2; GRE20203
Shinkawa	12/19/18	118248	\$17,913.50	Verify Promimity Probe Readings
Shinkawa	01/11/19	118415	\$1,469.00	(1) 202f Probe & (3) 202FL Probe
TIS BREWER, LLC	07/25/18	1082921-01	\$813.30	Mill Turbine Adjustment plates
TIS BREWER, LLC	11/27/18	1087104-01	\$6,251.00	SEW-Eurodrive, emergency weekend service, Texas
TIS BREWER, LLC	04/05/19	1090910-01	\$6,002.32	SEW-Eurodrive Ggearmotor in NJ
TIS BREWER, LLC	04/16/19	10191338-01	\$1,050.00	Qty 1 - (6) 20" Round x 12" Pitch RH Screw Flights; Qty 1 - (4) 20" Round x 10" Pitch RH Screw Flights
TIS BREWER, LLC	04/16/19	1091339-01	\$440.00	Qty 1 - (4) 20" Round x 12" Pitch RH Screw Flights
TIS BREWER, LLC	06/15/19	1093489-01	\$1,555.25	3 3/4" X 12" SCREW FLITE
TRASK-DECROW MACHINERY, INC	08/22/19	15202	\$3,041.88	2 REPLACE SULZER PUMP MECHANICAL SEAL ON GENERATOR COOLING WAT
United Rental	02/06/19	165705096-001	\$657.33	rented compressor for Ethos to run milling machine for gear box
UPS	01/19/19	00003Y9180039	\$10.35	Shipping defective part - Puleo Electronics
UPS	03/28/19	00003Y9180139	\$10.40	Shipment to American Power Services
Zampell Refractories	03/06/19	48789	\$1,960.16	4" & 6" lines added to turbine

### **Alan Storm**

Buffalo Turbine Invoicing	04/12/18	16022	\$5,003.10
	04/25/18	16023	\$8,178.81
	05/08/18	16025	\$9,362.10

05/17/18	16026	\$9,746.96
07/09/18	16031	\$14,259.46
09/10/18	16037	\$4,865.08
09/20/18	16039	\$768.21
09/27/18	16040	\$962.09
10/01/18	16041	\$2,159.29
10/05/18	16042	\$1,913.29
11/01/18	16044	\$4,777.04
11/08/18	16045	\$4,566.73
11/14/18	16046	\$5,940.49
11/21/18	16047	\$4,338.07
11/28/18	16049	\$3,875.06
12/07/18	16053	\$2,081.34

**Alan Storm Subtotal**


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 \$82,797.12
**Cianbro****Multiple Invoices**

9300.0058 - Turbine, Generator, Gear Box & Lube Oil System Rev	\$502,647.47
9300.0100 - Turbine Electrical Panel Modifications	\$19,932.52
9300.0101 - Fuel Infeed Equipment Modifications	\$23,778.30
9300.0102 - Combustion Chamber Enhancements	\$28,872.92
9300.0107 - Grate Cooling Piping Rework	\$1,317.60
9300.0111 - Chain Conveyor 4475 Modifications & Repairs	\$10,016.37
9300.0113 - Boiler Inspection & Rework	\$3,223.04
9300.0114 - Combustor Repairs	\$10,289.70
9300.0115 - Ash Conveyor Repairs	\$10,950.30
9300.0116 - Ejector Skid Repairs	\$5,151.55
9300.0117 - Hydraulic Skid Repairs	\$5,151.55
9300.0118 - Boiler Steam Drum Leaking Cap	\$610.60
9300.0119 - Cooling Tower Transmitter Relocation	\$696.98



- Fuel Infeed Equipment Cleaning Salt	\$1,463.10
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<b>Cianbro Subtotal</b>	<u>\$624,102.00</u>
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**Cianbro**

930.00123 - Rentech Boiler Repairs	\$3,135.35
9300.0125 - Steam Upgrades	\$6,942.92
9300.00126 - Grate Cooling	\$8,884.75

<b>Total Back Charges to KMW</b>	<u><u>\$1,397,786.97</u></u>
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THESE ARE ONLY THE CURRENT OUT-OF-POCKET EXPENSES RECEIVED BY GRE AS OF 10/15/2019, WHICH ARE STILL ACCRUING. THIS ALSO DOES NOT INCLUDE ANY CONSEQUENTIAL DAMAGES, RECOVERY OF WHICH IS HEREBY EXPRESSLY RESERVED.

# Ex. 4

## NOTICE OF CHANGE

<b>Owner</b>	Georges River, LLC 53 Ghent Road Searsmont, Maine 04973 U.S.	<b>NOC 1684-11B</b>  December __, 2019
<b>Seller</b>	KMW Energy, Inc. 635 Wilton Grove Road London, Ontario N6N 1N7 Canada	
<b>Contract</b>	Agreement between Buyer and Seller for Procurment Contracts dated December 16, 2016	

**The Contract is Modified by this Change Order to reflect the following Change(s):**

The changes are described on Exhibit A, attached hereto  
The changes do not affect the Contract Time

<b>Original Contract Price (USD)</b>	\$ 12,825,000.00
<b>Previous Change Orders (1 - 10)</b>	\$ <u>(170,571.59)</u>
<b>Contract Price Prior to this Change Order</b>	\$ 12,654,428.41
<b>Change Order 11</b>	\$ (1,397,786.97)
<b>Change Order 12</b>	\$ (149,573.01)
<b>This Change Order 11B</b>	\$ <u>(81,749.45)</u>
<b>Revised Contract Price</b>	\$ 11,025,318.98

**Approved by:**

**Buyer:**

**Seller:**

\_\_\_\_\_  
Georges River Energy, LLC

\_\_\_\_\_  
KMW Eenergy, Inc.

By: \_\_\_\_\_

Its: \_\_\_\_\_

By: \_\_\_\_\_

Its: \_\_\_\_\_

## Exhibit A to NOC 1684-11B

## KMW Back Charges for GRE Out of Pocket Expenses between October 16, 2019 and December 31, 2019

The attached list reflects back charges for GRE's out of pocket expenses totaling \$81,749.45 for invoices received from October 16, 2019 through December 31, 2019.

This list does not include, and should not be construed as a waiver of, back charges for similar costs that GRE may incur after said date or has not yet received invoices for or the right to recover of any other type damages specifically including, but not limited to, consequential damages, which rights are expressly reserved.

<u>Supplier</u>	<u>Date</u>	<u>Invoice</u>	<u>Amount</u>	<u>Quantity</u>	<u>Description</u>
CENTRAL MAINE POWER CO	10/22/19	703000643564	\$1,636.01	23,245.	KWH - 09/21/19-10/21/19 SUPPLY CHARGE
CENTRAL MAINE POWER CO	10/22/19	703000643564	\$226.19	23,245.	KWH - 09/21/19-10/21/19 DELIVERY CHARGE
CENTRAL MAINE POWER CO	11/21/19	710000649738	\$175.17	2,267.	KWH - 10/22/19-11/19/19 SUPPLY CHARGE
CENTRAL MAINE POWER CO	11/21/19	710000649738	\$142.76	2,267.	KWH - 10/22/19-11/19/19 DELIVERY CHARGE
CENTRAL MAINE POWER CO	12/23/19	707000682251	\$4,280.96	43,548.	KWH - 11/22/19-12/19/19 SUPPLY CHARGE
CENTRAL MAINE POWER CO	12/23/19	707000682251	\$306.95	43,548.	KWH - 11/22/19-12/19/19 DELIVERY CHARGE
STANTEC CONSULTING SERVICES	11/22/19	1590109	\$3,182.40		SUPPORT SERVICES FOR REPLACEMENT OF 8.5MW STG
PROGRESS ENGINEERING LLC	12/04/19	3843	\$57.23	105.	DANA HODGKINS MILEAGE 11/25
PROGRESS ENGINEERING LLC	12/04/19	3843	\$150.00	1.	GRE BOILER GRATES
PROGRESS ENGINEERING LLC	12/04/19	3843	\$1,425.00	9.5	ON SITE, WORK ON KMW PLC, SLIDES FOR BOILER GRATES
CIANBRO CORPORATION	10/18/19	12217356-034	\$27,465.56		TOTAL LABOR
CIANBRO CORPORATION	10/18/19	12217356-034	\$1,447.93		TOTAL MATERIALS

CIANBRO CORPORATION	10/18/19	12217356-034	\$1,575.45	TOTAL SUBCONTRACTORS
CIANBRO CORPORATION	10/18/19	12217356-034	\$1,485.00	TOTAL EQUIPMENT
CIANBRO CORPORATION	10/18/19	12217356-034	\$1,528.71	TOTAL 3RD PARTY RENTAL
CIANBRO CORPORATION	10/18/19	12217356-034	\$88.63	TOTAL CONSUMABLES
CIANBRO CORPORATION	10/18/19	12217356-034	\$596.70	TOTAL TRUCKING
CIANBRO CORPORATION	10/18/19	12217356-034	\$2,746.60	TOTAL MARKUP
CIANBRO CORPORATION	11/13/19	12217356-035	\$520.00	TOTAL LABOR
CIANBRO CORPORATION	11/13/19	12217356-035	\$2,837.44	TOTAL MATERIALS
CIANBRO CORPORATION	11/13/19	12217356-035	\$3,128.76	TOTAL SUBCONTRACTORS
CIANBRO CORPORATION	11/13/19	12217356-035	\$375.00	TOTAL EQUIPMENT
CIANBRO CORPORATION	11/13/19	12217356-035	\$2,041.20	TOTAL 3RD PARTY RENTAL
CIANBRO CORPORATION	11/13/19	12217356-035	\$205.85	TOTAL CONSUMABLES
CIANBRO CORPORATION	11/13/19	12217356-035	\$193.05	TOTAL TRUCKING
CIANBRO CORPORATION	11/13/19	12217356-035	\$52.01	LABOR MARKUP
CARDMEMBER SERVICE	09/24/19	CCSTMT-09-2019	\$2,342.27	1.0 BEARING, 4 BOLT FLANGE, 2-3/16, STOKER SCREW
KAMAN INDUSTRIAL TECHNOLOGIES	10/07/19	A733157	\$530.42	12.0 BEARING, SPERICAL, FAFNIR/TIMKIN, COMBUSTOR CYLINDERS
KAMAN INDUSTRIAL TECHNOLOGIES	12/02/19	J408309	\$2,543.63	1.0 BEARING, ROLLER, FLANGE, 4 BOLT, 3-15/16" SHAFT
KAMAN INDUSTRIAL TECHNOLOGIES	12/11/19	N 40674	\$527.10	12.0 SPHERICAL BEARING, COMBUSTOR CYLINDERS, GRE
MOTION INDUSTRIES, INC	12/04/19	ME07-328490	\$919.46	6.0 SEAL KIT, COMBUSTOR CYLINDER, GRE

**Not Previously noted**

HORIZON SOLUTIONS, LLC	11/21/18	4894080-00	\$2,830.00	RSLOGIX 500 STANDARD EDITION SOFTWARE
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**The two invoices below from Casco Systems were posted by GRE 12/18/2019 as outstanding balances waiting for testing**

CASCO SYSTEMS, LLC	03/21/19	3499A	\$9,378.83	PERFORM AVR WORK AS OUTLINED IN PROPOSAL 2019-0025 - 50%
CASCO SYSTEMS, LLC	06/21/19	3665	\$4,807.18	GRE MANUAL SYNCH PANEL SUPPORT

**Total Back Charges  
to KMW**

**\$81,749.45**

THESE ARE ONLY THE CURRENT OUT-OF-POCKET EXPENSES RECEIVED BY GRE AS OF 12/31/2019, WHICH ARE STILL ACCRUING. THIS ALSO DOES NOT INCLUDE ANY CONSEQUENTIAL DAMAGES, RECOVERY OF WHICH IS HEREBY EXPRESSLY RESERVED.

# Ex. 5



## NOTICE OF CHANGE

<b>Owner</b>	Georges River, LLC 53 Ghent Road Searsmont, Maine 04973 U.S.	<b>NOC 1684-12</b>  October __, 2019
<b>Seller</b>	KMW Energy, Inc. 635 Wilton Grove Road London, Ontario N6N 1N7 Canada	
<b>Contract</b>	Agreement between Buyer and Seller for Procurment Contracts dated December 16, 2016	

**The Contract is Modified by this Change Order to reflect the following Change(s):**

The changes are described on Exhibit A, attached hereto  
The changes do not affect the Contract Time

<b>Original Contract Price (USD)</b>	\$ 12,825,000.00
<b>Previous Change Orders (1 - 11)</b>	\$ <u>(1,568,358.56)</u>
<b>Contract Price Prior to this Change Order</b>	\$ 11,256,641.44
<b>This Change Order</b>	\$ <u>(149,573.01)</u>
<b>Revised Contract Price</b>	\$ 11,107,068.43

**Approved by:**

**Buyer:**

\_\_\_\_\_  
Georges River Energy, LLC

By: \_\_\_\_\_

Its: \_\_\_\_\_

**Seller:**

\_\_\_\_\_  
KMW Eenergy, Inc.

By: \_\_\_\_\_

Its: \_\_\_\_\_

## Exhibit A to NOC 1684-12

**KMW Back Charges for GRE Out of Pocket Expenses as of October 15, 2019**

The attached list reflects back charges for GRE's out of pocket expenses totaling \$149,573.01 as of October 15, 2019. This list does not include, and should not be construed as a waiver of, back charges for similar costs that GRE may incur after said date or has not yet received invoices for or the right to recover of any other type damages specifically including, but not limited to, consequential damages, which rights are expressly reserved.

<u>Supplier</u>	<u>Date</u>	<u>Invoice</u>	<u>Amount</u>	
Farm Credit	02/26/19		\$10,109.00	Loan Amendment Application fee
EATON PEABODY	03/13/19	535261	\$11,735.00	PROFESSIONAL SERVICES RENDERED THROUGH FEBRUARY 28, 2019
EATON PEABODY	03/13/19	535261	\$5.50	DISBURSEMENTS
EATON PEABODY	04/10/19	EATONPEABODY419	\$24,500.00	KMW LEGAL FEES THRU MARCH 31, 2019
EATON PEABODY	05/15/19	539757	\$10,012.23	FOR PROFESSIONS SERVICES RENDERED THROUGH APRIL 30, 2019
EATON PEABODY	06/17/19	541934	\$294.00	WORK WITH RASMUSSEN
EATON PEABODY	06/21/19	542021	\$9,687.33	GRE - KMW / CHOLA TURBINE
EATON PEABODY	07/12/19	543311	\$10,715.38	SERVICES RENDERED THROUGH 06/30/19 RE: TURBINE
EATON PEABODY	08/13/19	544936	\$7,633.36	SERVICES RENDERED THROUGH 07/31/19 RE: TURBINE
MD&A LTD	05/30/19	737750	\$54,663.96	SITE INSPECTION OF TURBINE BY DAVID RASMUSSEN, P.E.
MID-SOUTH ENGINEERING	05/26/19	514511	\$1,128.75	TURBINE REJECTION CLAIM
PERKINS THOMPSON	03/19/19	110307/2923.013	\$7,813.00	ROBBINS LEGAL WORK 1/2/19-2/28/19 - LOAN MODIFICATION
PERKINS THOMPSON	08/14/19	113771	\$1,275.50	LOAN AMENDMENT - RESULT OF GRE TURBINE ISSUE WITH KMW

**Total Back Charges  
to KMW**

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**\$149,573.01**

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THESE ARE ONLY THE CURRENT OUT-OF-POCKET EXPENSES RECEIVED BY GRE AS OF 10/15/2019, WHICH ARE STILL ACCRUING. THIS ALSO DOES NOT INCLUDE ANY CONSEQUENTIAL DAMAGES, RECOVERY OF WHICH IS HEREBY EXPRESSLY RESERVED.

# Ex. 6

## NOTICE OF CHANGE

<b>Owner</b>	Georges River, LLC 53 Ghent Road Searsmont, Maine 04973 U.S.	<b>NOC 1684-12B</b>  December __, 2019
<b>Seller</b>	KMW Energy, Inc. 635 Wilton Grove Road London, Ontario N6N 1N7 Canada	
<b>Contract</b>	Agreement between Buyer and Seller for Procurment Contracts dated December 16, 2016	

**The Contract is Modified by this Change Order to reflect the following Change(s):**

The changes are described on Exhibit A, attached hereto  
The changes do not affect the Contract Time

<b>Original Contract Price (USD)</b>	\$ 12,825,000.00
<b>Previous Change Orders (1 - 10)</b>	\$ <u>(170,571.59)</u>
<b>Contract Price Prior to this Change Order</b>	\$ 12,654,428.41
<b>Change Order 11</b>	\$ (1,397,786.97)
<b>Change Order 12</b>	\$ (149,573.01)
<b>Change Order 11B</b>	\$ (81,749.45)
<b>This Change Order 12B</b>	\$ <u>(39,644.06)</u>
<b>Revised Contract Price</b>	\$ 10,985,674.92

**Approved by:**

**Buyer:**

\_\_\_\_\_  
Georges River Energy, LLC

**Seller:**

\_\_\_\_\_  
KMW Eenergy, Inc.

By: \_\_\_\_\_

Its: \_\_\_\_\_

By: \_\_\_\_\_

Its: \_\_\_\_\_

## Exhibit A to NOC 1684-12B

## KMW Back Charges for GRE Out of Pocket Expenses between October 16, 2019 and December 31, 2019

The attached list reflects back charges for GRE's out of pocket expenses totaling \$39,644.06 for invoices received from October 16, 2019 through December 31, 2019.

This list does not include, and should not be construed as a waiver of, back charges for similar costs that GRE may incur after said date or has not yet received invoices for or the right to recover of any other type damages specifically including, but not limited to, consequential damages, which rights are expressly reserved.

<u>Supplier</u>	<u>Date</u>	<u>Invoice</u>	<u>Amount</u>	
EATON PEABODY	09/06/19	546300	\$6,570.90	SERVICES RENDERED THROUGH 08/31/19-CHOLA TURBINE
EATON PEABODY	10/16/19	548435	\$11,381.88	SERVICES RENDERED THROUGH 09/30/19-CHOLA TURBINE
EATON PEABODY	11/08/19	549720	\$392.00	SERVICES RENDERED THROUGH OCT 31, 2019 - TURBINE RELATED
EATON PEABODY	11/08/19	549718	\$13,706.98	SERVICES RENDERED THROUGH OCT 31, 2019 GRE-CHOLA TURBINE
EATON PEABODY	12/10/19	551719	\$7,592.30	GRE-CHOLA TURBINE SERVICES RENDERED THROUGH 11/30/19

**Total Back Charges  
to KMW**

**\$39,644.06**

THESE ARE ONLY THE CURRENT OUT-OF-POCKET EXPENSES RECEIVED BY GRE AS OF 12/31/2019, WHICH ARE STILL ACCRUING. THIS ALSO DOES NOT INCLUDE ANY CONSEQUENTIAL DAMAGES, RECOVERY OF WHICH IS HEREBY EXPRESSLY RESERVED.

# Ex. 7



## NOTICE OF CHANGE

<b>Owner</b>	Georges River, LLC 53 Ghent Road Searsmont, Maine 04973 U.S.	<b>NOC 1684-12C</b>  January __, 2019
<b>Seller</b>	KMW Energy, Inc. 635 Wilton Grove Road London, Ontario N6N 1N7 Canada	
<b>Contract</b>	Agreement between Buyer and Seller for Procurement Contracts dated December 16, 2016	

**The Contract is Modified by this Change Order to reflect the following Change(s):**

The changes are described on Exhibit A, attached hereto  
The changes do not affect the Contract Time

<b>Original Contract Price (USD)</b>	\$	12,825,000.00
<b>Previous Change Orders (1 - 10)</b>	\$	<u>(170,571.59)</u>
<b>Contract Price Prior to this Change Order</b>	\$	12,654,428.41
<b>Change Order 11</b>	\$	(1,397,786.97)
<b>Change Order 12</b>	\$	(149,573.01)
<b>Change Order 11B</b>	\$	(81,749.45)
<b>Change Order 12B</b>	\$	(39,644.06)
<b>This Change Order 12C</b>	\$	<u>(3,139.50)</u>
<b>Revised Contract Price</b>	\$	10,982,535.42

**Approved by:**

**Buyer:**

\_\_\_\_\_  
Georges River Energy, LLC

By: \_\_\_\_\_

Its: \_\_\_\_\_

**Seller:**

\_\_\_\_\_  
KMW Energy, Inc.

By: \_\_\_\_\_

Its: \_\_\_\_\_

Past damages:

This estimate is provided without prejudice solely for the purpose of settlement negotiations subject to Rule 408 of the Federal and Maine Rules of Evidence, and provided with the express agreement of the parties that the document and information contained therein is inadmissible for any purpose, and may not be used or relied upon by any witness in any proceeding. It constitutes GRE's best estimate of its damages incurred prior to the date indicated thereon based on GRE's current state of knowledge and therefore is subject to revision.

Future damages:

This estimate is provided without prejudice subject to Rule 408 of the Federal and Maine Rules of Evidence solely for the purpose of guiding the parties in settlement negotiations. It constitutes a rough estimate of the range of GRE's anticipated future damages. It is based on GRE's current state of knowledge and the assumption there will be no material changes in the operation of the facility or other circumstances. It is subject to the caveat that GRE's actual damages can only be determined retrospectively and may vary substantially from the estimated range.

Exhibit A to NOC 1684-12C

**KMW Back Charges for GRE Out of Pocket Expenses between January 1, 2020 and January 29, 2020**

The attached list reflects back charges for GRE's out of pocket expenses totaling \$3,139.50 for invoices GRE has received from January 1, 2020 through January 29, 2020.

This list does not include, and should not be construed as a waiver of, back charges for similar costs that GRE may incur after said date or has not yet received invoices for or the right to recover of any other type damages specifically including, but not limited to, consequential damages, which rights are expressly reserved.

<u>Supplier</u>	<u>Date</u>	<u>Invoice</u>	<u>Amount</u>
EATON PEABODY	01/10/20	553348	\$3,139.50
			ROBBINS/GRE-CHOLA TURBINE-SERVICES RENDERED THROUGH 12/31/19

**Total Back Charges to KMW**  

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**\$3,139.50**

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THESE ARE ONLY THE CURRENT OUT-OF-POCKET EXPENSES RECEIVED BY GRE AS OF 01/29/2020 WHICH ARE STILL ACCRUING. THIS ALSO DOES NOT INCLUDE ANY CONSEQUENTIAL DAMAGES, RECOVERY OF WHICH IS HEREBY EXPRESSLY RESERVED.

Past damages:

This estimate is provided without prejudice solely for the purpose of settlement negotiations subject to Rule 408 of the Federal and Maine Rules of Evidence, and provided with the express agreement of the parties that the document and information contained therein is inadmissible for any purpose, and may not be used or relied upon by any witness in any proceeding. It constitutes GRE's best estimate of its damages incurred prior to the date indicated thereon based on GRE's current state of knowledge and therefore is subject to revision.

Future damages:

This estimate is provided without prejudice subject to Rule 408 of the Federal and Maine Rules of Evidence solely for the purpose of guiding the parties in settlement negotiations. It constitutes a rough estimate of the range of GRE's anticipated future damages. It is based on GRE's current state of knowledge and the assumption there will be no material changes in the operation of the facility or other circumstances. It is subject to the caveat that GRE's actual damages can only be determined retrospectively and may vary substantially from the estimated range.

# Ex. 8

**Incentive Payments and Liquidated Damages per the contract section 7.02**

(7.02 H and 7.02 I, page 20)

**Incentive Payment:**

Summary: Early delivery more than 15 days prior to scheduled delivery; not entitled to more than 20 days for each good; \$1,500 per day; not to exceed \$90,000 in aggregate

<u>Item</u>	<u>Scheduled Delivery</u>	<u>Delivery Date</u>	<u>Number of Days Early</u>	<u>Number of Day Applicable</u>	<u>Daily Rate</u>	<u>Total Incentive Due</u>
Generator	12/19/2017	10/26/2017	54	20	\$1,500	\$30,000

**Liquidated Damages:**

Summary: Late delivery more than 15 days after scheduled delivery; \$1,500 per day; not to exceed 6% of the Contract Price

<u>Item</u>	<u>Scheduled Delivery</u>	<u>Delivery Date</u>	<u>Number of Days Late</u>	<u>Number of Day Applicable</u>	<u>Daily Rate</u>	<u>Total Incentive Due</u>
Boiler	10/23/2017	11/20/2017	28	13	\$1,500	\$19,500
Turbine	12/19/2017	03/20/2018	91	76	\$1,500	\$114,000
						<u>\$133,500</u>

**Liquidated Damages Net of Incentive Payments****\$103,500**

# Ex. 9

# Georges River Energy, LLC

## Business Income Interruption Summary for Turbine Replacement

	Annual	MONTHLY
TOTAL REVENUES	\$7,781,650	\$648,471
TOTAL AVOIDED COSTS	\$3,465,774	(\$288,815)
TOTAL UNAVOIDABLE COSTS	\$100,000	\$8,333
ADDITIONALCOMPENSABLE MONTHLY COSTS DURING SHUTDOWN PERIOD		\$120,416
<b>TOTAL MONTHLY BUSINESS INTERRUPTION CLAIM</b>		<hr/> <b>\$488,406</b>

# Georges River Energy, LLC

## Annual Business Interruption Worksheet

<b>BASIS:</b> Production in MW	7.5
# of Weeks per Year*	50
* 7 days per week, 24 hours per day	
Runtime during those weeks	95%

Annual MW Produced	59,850
PPA Rate per MW Energy	\$99.000

### Renewable Energy Credits

Contract (1) through 2022	
Rate Per REC	\$15.500
Contract Quantity	15,000
Contract (2) through 2022	
Rate Per REC	\$15.500
Contract Quantity	15,000
Contract (3) through 2020	
Rate Per REC	\$34.500
Contract Quantity	10,000

### Capacity Payments

Currently not participating

Annual Runtime (hours)	7,980
Green Tons per Hour (per KMW - Manufacturer)	15.44
Total Green Tons Required (including extraction steam) (GT/Hr x Annual Hrs)	123,211
Less Mill Residuals	<u>(7,750)</u>
Purchased Fuel	115,461

Average Cost per Green Ton	\$26
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# Georges River Energy, LLC

## Annual Business Interruption Worksheet

REVENUES	Annual	Monthly	MONTHLY TOTALS
Energy Payments	\$5,925,150	\$493,763	
Renewable Energy Credits			
Contract (1)	\$232,500	\$19,375	
Contract (2)	\$232,500	\$19,375	
Contract (3)	\$345,000	\$28,750	
Steam Supplied to RLCO	<u>\$1,046,500</u>	<u>\$87,208</u>	
<b>TOTAL REVENUES</b>	<u><b>\$7,781,650</b></u>		<b>\$648,471</b>
<b>AVOIDED COSTS</b>			
Materials and Supplies			
Fuel	\$3,001,974	\$250,165	
Materials, Supplies, & Subs	\$243,000	\$20,250	
Payroll			
Workers temporarily assigned to RLCO to operate RLCO boiler	<u>\$220,800</u>	<u>\$18,400</u>	
<b>TOTAL AVOIDED COSTS</b>	<u><b>\$3,465,774</b></u>		<b>(\$288,815)</b>
<b>ONGOING UNAVOIDABLE COSTS</b>			
Payroll			
Administrative Costs	<u>\$100,000</u>	<u>\$8,333</u>	
<b>TOTAL UNAVOIDABLE COSTS</b>	<u><b>\$100,000</b></u>		<b>\$8,333</b>
<b>ADDITIONAL COMPENSABLE MONTHLY COSTS DURING SHUTDOWN PERIOD</b>			
Engineering Services		\$41,666	
Electrical Power Purchases		\$20,000	
Legal & Professional		\$10,000	
Cover for REC contracts 1 & 2		<u>\$48,750</u>	
<b>TOTAL ADDITIONAL MONTHLY COSTS</b>			<u><b>\$120,416</b></u>
<b>TOTAL MONTHLY BUSINESS INTERRUPTION CLAIM</b>			<b>\$488,406</b>



# Ex. 10

# Georges River Energy, LLC

## Lost Revenue under the PPA, Lost Renewable Energy Credits, and Additional Cost incurred

	Year 2019	Year 2020
Lost Net Revenue under the PPA	\$1,236,557.43	\$499,834.88
Lost Renewable Energy Credit Revenue	\$644,978.50	\$405,425.25
Lost Opportunity in FCM Reconfiguartion Auctions	\$67,050.00	\$204,705.00
Net Additional Cost to run Second Boiler	\$184,945.00	\$184,945.00
Additional Cost incurred for two additional employees		\$83,700
<b>Net Revenue Loss &amp; Additional Costs incurred</b>	<b>\$2,133,530.93</b>	<b>\$1,378,610.13</b>

# Georges River Energy, LLC

## Lost Revenue under the PPA, Lost Renewable Energy Credits, and Additional Cost incurred

	<u>Year 2019</u>	<u>January 2020</u>
Net Production in MW	7.5	7.5
# of Weeks per Year*	50	50
* 7 days per week, 24 hours per day		
Runtime during those weeks	90%	95%
Daily Net MW Production	180.00	180.00
Number of Days (January 1, 2019 - January 31, 2020)	365	31
Less Number of Days Scheduled for Shutdown	(14)	0
Total Days Of Operation	351	31
Adjusted Number of Days for 90% Runtime in 2019 and 95% Runtime 2020 through 2039	315.90	29.45

### Lost Revenue

Total Net MW Production for 315.9 Adjusted Days of Runtime and 29.45 Adjusted Days of Runtime	56,862.000	5,301.000
PPA Rate per MW Energy Sold	\$99.000	\$99.000
Energy Sales Revenue from 56862 MW produced 5301 MW at a rate of \$99 per MW	\$5,629,338.00	\$524,799.00
Actual Energy Sales Revenue Generated from January 1, 2019 - January 31, 2020)	\$3,552,412.39	\$450,652.95
<b>Lost GROSS Energy Sales for Each Period</b>	<b>\$2,076,925.61</b>	<b>\$74,146.05</b>

### Fuel Cost

Green Tons per Hour (per KMW - Manufacturer @ Net 7.5MW Operation including extraction steam)	15.44	15.44
Percentage of Fuel used for Steam Extraction (derived from Mid-South Engineering calculation under normal steam load)	25.88%	25.88%
Green Tons necessary per Hour for Net 7.5MW	11.444	11.444
Green Tons necessary per Day for Net 7.5MW	274.656	274.656
Green Tons per Day for 315.9 Adjusted Number of Days for 90% Runtime in 2019 and 95% Runtime 2020 through 2039 To Generate 56862MW and 5301MW respectively	86,763.830	8,088.619

## Georges River Energy, LLC

### Lost Revenue under the PPA, Lost Renewable Energy Credits, and Additional Cost incurred

Green Tons per MW to generate 56862MW in 2019 & 5301MW in January 2020	1.526	1.526
MW Production Lost Based on Lost Energy Sales (Lost Gross Energy Sales divided by PPA Rate per MW)	20,979.047	748.950
Green Tons Required to Generate 20979.047MW and 748.95MW	32,014.026	1,142.898
Average Cost of All Fuel Sources through January 31, 2020	\$26.250	\$26.250
<b>Cost of Fuel Required to Generate Lost GROSS Energy Sales</b>	<b>\$840,368.18</b>	<b>\$30,001.07</b>
<b>Lost NET Energy Sales January 31, 2020 Only (one Month)</b>		<b>\$44,144.98</b>
<b>Daily Lost NET Energy Sales January 31, 2020 Only</b>		<b>\$1,498.98</b>
<b>Annual Lost NET Energy Sales Under the PPA</b>	<b>\$1,236,557.43</b>	<b>\$499,834.88</b>
<b>Sales of Renewable Energy Credits</b>		
Total Annual Net MW Production for 90% and 95%	56,862.000	60,021.000
Current Average Contract Rate	\$20.250	\$20.250
Sales at lowest contract rate	\$1,151,455.50	\$1,215,425.25
Actual Renewable Energy Credits contract signed because of reduced unreliable capacity	\$506,477.00	\$810,000.00
<b>Annual Lost Renewable Energy Credits</b>	<b>\$644,978.50</b>	<b>\$405,425.25</b>
<b>Lost Opportunity in FCM Reconfiguration Auctions</b>	<b>\$67,050.00</b>	<b>\$204,705.00</b>
<b>Net Cost of Running Additional Boiler</b>	<b>\$184,945.00</b>	<b>\$184,945.00</b>
<b>Additonal Payroll Costs (two additonal employees)</b>		<b>\$83,700.00</b>
<b>Total Lost Net Energy Sale, Lost RECs and Additional Costs</b>	<b>\$2,133,530.93</b>	<b>\$1,378,610.13</b>

**IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A PROPOSAL OF KMW ENERGY INC.**

Estate File Number: 35-2638322  
Court File No.: 35-2638322

**ONTARIO  
SUPERIOR COURT OF JUSTICE  
(COMMERCIAL LIST)  
(IN BANKRUPTCY AND INSOLVENCY)**

PROCEEDING COMMENCED AT  
TORONTO

**AFFIDAVIT OF JAMES A. ROBBINS**

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Lawyers for Georges River Energy, LLC

**TAB 3**

Estate File Number: 35-2638322  
Court File No.: 35-2638322

**ONTARIO  
SUPERIOR COURT OF JUSTICE  
(COMMERCIAL LIST)  
(IN BANKRUPTCY AND INSOLVENCY)**

THE HONOURABLE MR.	)	FRIDAY, THE 15 <sup>th</sup>
	)	
JUSTICE HAINEY	)	DAY OF MAY, 2020

**IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A PROPOSAL  
OF KMW ENERGY INC.**

**ORDER  
(Motion to Lift Stay of Proceedings)**

**THIS MOTION**, made by Georges River Energy, LLC (“**GRE**”) for an Order pursuant to the *Bankruptcy and Insolvency Act*, R.S.C. 1985, c. B-3 (the “**BIA**”) lifting the stay of proceedings (the “**Stay of Proceedings**”) under Section 69(1) of the BIA proceeded by way of judicial videoconference due to the COVID-19 crisis, in accordance with the change in operations of the Commercial List in light of the COVID-19 crisis and the Chief Justice’s Notice to the Profession dated March 15, 2020.

**ON READING** the affidavit of James A. Robbins sworn May 1, 2020 and the exhibits thereto, the Motion Record of GRE dated May 5<sup>th</sup>, 2020, and on hearing the submissions of counsel for GRE, counsel for KMW Energy Inc. (“**KMW**”) and ● no one appearing although duly served as appears from the affidavit of service of Sophie Moher sworn May ●, 2020,

1. **THIS COURT ORDERS** that the time for service of this Motion is abridged and validated, and the court hereby dispenses with further service hereof;

2. **THIS COURT ORDERS** that the Stay of Proceedings established by section 69(1) of the BIA shall be and is hereby lifted for the sole purpose of permitting GRE to declare a default and formally terminate KMW's right to complete the contract between GRE and KMW dated December 6, 2016.

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**IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A PROPOSAL OF KMW ENERGY INC.**

Estate File Number: 35-2638322

Court File No.: 35-2638322

**ONTARIO  
SUPERIOR COURT OF JUSTICE  
(COMMERCIAL LIST)  
(IN BANKRUPTCY AND INSOLVENCY)**

PROCEEDING COMMENCED AT  
TORONTO

**ORDER**

**(Motion to Lift Stay of Proceedings)**

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**IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A PROPOSAL OF KMW ENERGY INC.**

Estate File Number: 35-2638322  
Court File No.: 35-2638322

**ONTARIO  
SUPERIOR COURT OF JUSTICE  
(COMMERCIAL LIST)  
(IN BANKRUPTCY AND INSOLVENCY)**

PROCEEDING COMMENCED AT  
TORONTO

**MOTION RECORD**

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