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**IN THE MATTER OF THE YUKON ENERGY CORPORATION
Tlingit Homeland Energy EPA**

Heard before the

YUKON UTILITIES BOARD

July 19 - 20, 2022

WRITTEN ARGUMENT OF NATHANIEL YEE

Introductory Comments:

As I was reviewing the EPA, I kept in mind the specific aspects that the Minister had requested the Board to review. My argument be formatted to these six terms of reference, and I will start with

(e) Evidence that all reasonable alternative options have been considered, and that proposed spending commitments have been selected on reasonable grounds;

and will then proceed to address the other specifics in order. Issues not addressed in this document are not implying agreement or disagreement, but are left to other intervenors and the Board.

Arguments:

(e) Evidence that all reasonable alternative options have been considered, and that proposed spending commitments have been selected on reasonable grounds; (A-1 p.5)

1. YEC has not considered or provided information on any viable or reasonable alternative options, and is using the same “only option” argument used in the 2021 GRA and BESS.
2. As YEC has presented no viable alternatives, the Board’s ability to confirm that proposed spending commitments have been selected on reasonable grounds is severely limited.
3. “In summary, **the Project is the only near-term resource option** other than the BESS (which is currently being developed) to provide material added renewable dependable capacity benefits – highlighting the extent to which **there are no current renewable resource alternatives to the Amended EPA that merit consideration at this time.**” (emphasis added, B-5, p.25, pdf p.29) This “only option” approach and language very closely match what YEC used to justify the BESS project. (B-8, pdf p.723)
4. “The only other alternative identified to date for meeting the capacity shortfall without rented diesels would be to develop additional permanent thermal (diesel) capability beyond the planned replacements of retired units.” (B-5, p.25, pdf p.29)
5. However, “YEC stated that its board of directors made the decision to not pursue a permanent thermal plant and instead to focus on renewable projects.” (B-8, pdf p.700)
6. And “the development of new permanent diesel plants is not supported by stakeholders and is also not in line with goals outlined in Yukon government’s draft “Our Clean Future: A Yukon strategy for climate change, energy and a green economy.” (B-5, p.25, pdf p.29)

7. YEC has also confirmed that a permanent greenfield thermal option would take at least four years and could not be built in time to address capacity shortfall issues.
8. “Yukon Energy has confirmed that as at 2019, when the decision was made to not pursue the 20 MW new diesel plant option after completion of detailed planning work, it would have taken at least four years to plan, permit and construct a new 20 MW or 12.5 MW diesel plant,” (B-8, pdf p.745 line 4)
9. Therefore, the abandoned plans for a 20MW or 12.5MW thermal plant cannot reasonably be considered as alternative option to the Project. Or as YEC put it, “A 20 MW New Thermal Plant is not a Viable Option.” (B-8, pdf p.724)
10. The ever expanding rental diesel fleet is not a reliable alternative, according to the Board. It is not a viable option according to YEC.
11. “The Board is persuaded that only relying on rented diesel generators would be challenging and would not be a reliable way of closing the capacity shortfall gap.” (B-8, pdf p.706) YEC goes further and says “that maintaining the status quo (*of rental diesel*) is also not a viable option...” (B-8, pdf p.724)
12. “Aside from added costs, a reliance on rented diesel units can create risks as to continuing availability, acceptable performance and the ability to connect the required rental units.” (B-5, p.19, pdf p.23)
13. As YEC says, rental diesel is unreliable and risky, and maintaining this as the status quo is not a viable or feasible option. “YEC’s current method of mitigating the capacity shortfall is relying on rented diesel units. However, in YEC’s view, these units introduce risks since there are uncertainties around their continued availability, their acceptable performance, and YEC’s ability to spatially accommodate the units. YEC stated that these risks potentially expose grid customers to unreliable generation capacity. For these reasons, YEC submitted that maintaining the status quo was not a feasible option in the circumstances and that permanent solutions were needed.” (B-8 p. 702) If YEC says it is not a viable or feasible option, it would follow that it is not a reasonable alternative option.
14. And yet YEC suggests that this unreliable and unfeasible option is the alternative to the EPA and other YEC projects. “For example, without new resources beyond DSM and WH#2 uprate the N-1 shortfall would grow to 61.2 MW by winter 2030/31 which would require 35 rental 1.8 MW diesel units (see Table 3-1). In additional [sic] to the challenges finding this number of rental diesels, YEC would also face location and connection issues to safely connect diesel rental units to YIS.” (B-5, p.19, pdf p.23)
15. Further, YEC has not taken done any serious study of the benefits and disadvantages of these or other thermal options.
16. YUB-YEC-1-36 c) Asks YEC to “Disclose all documents within YEC's control, both public and internal, relating to the comparative benefits and disadvantages of thermal generation options, including rental diesel generators, purchasing portable diesel generators, and constructing a large (e.g. 20 MW) permanent diesel generator. Include all comparative financial benefits and disadvantages of each option.” (B-8, pdf p.276 line 27)

17. In response, YEC does not provide any documents, and relies mostly on quotes from Mr. Hall from the 2021 GRA.

18. Vague “evidence” that “rented diesels are the only feasible option.” (B-8, pdf p.279 line 11) indicates that YEC did not believe that such analysis or a business case was necessary.

19. “Following the 2016 Resource Plan, YEC diligently pursued permanent solution options, including the 20 MW new diesel plant, the third LNG unit, the BESS project, dependable capacity DSM, and potential new dependable hydro capacity options. Given these actions there is no basis for suggesting that YEC was imprudent or irresponsible in its planning to address the dependable capacity gap.” (B-8, pdf p.278 line 21)

20. However, none of this has actually addressed the dependable capacity gap. It is difficult to see how the planning was prudent or responsible, given that “the only feasible option” was the last minute and difficult installation of temporary rental diesel. It was certainly not part of the plan.

21. “the challenges that Yukon Energy faced in successfully securing sufficient additional rental diesels” (B-8, pdf p.279 line 17) also does not indicate prudent or responsible planning. A temporary and rushed quick fix is indicative of the failure of planning.

22. Despite questioning from the Board, YEC also indicates that they have no intention to investigate or analyze other options or variations on rental diesel.

23. “Questions were raised in the 2021 GRA Exhibit C-6 and in 2021 GRA cross examination by the Board relating to the possibility of purchasing rather than renting required diesel units, with an assumed later sale when greenfield projects are completed.” (B-8, pdf p.280 line 1)

24. Part of YEC’s response included “Further, and in any event – Finning (who is renting the units to YEC) has not made any proposals for YEC ownership and in some cases does not even own the units that it is renting to YEC.” (B-8, pdf p.280 line 30)

25. Why would it be up to Finning to propose YEC ownership? Can YEC claim to have considered all reasonable alternative options while leaving this responsibility to vendors? Is letting vendors drive the process considered prudent and responsible? YEC has not made any effort to investigate other options and vendors have for the most part not presented unsolicited proposals. This does not mean that other options do not exist. In other companies, one of the roles of management is to explore the options. It is unclear why YEC management is resistant to this.

26. “Further, the evidence also demonstrates that rented diesels is a flexible year-by-year option that avoids capital cost commitments and related risks associated with asset ownership options.” (B-8, pdf p.280 line 11)

27. This “evidence” is meaningless, as YEC has not made any investigation of capital cost commitments or associated risks. Sure capital costs are avoided by renting, but what are the costs and what are the risks? Unknown.

28. Returning to the Minister’s question, YEC has not provided any reasonable alternative options, so proposed spending commitments cannot be confirmed to be reasonable.

(a) The public need for the agreement under various reasonable electric load forecasts;

29. As YEC claims that there are no reasonable or viable alternatives, there does seem to be a need for the agreement. YEC claims that this is the only near-term renewable resource option. The same claim was used in the BESS proceeding. Personally I like both the EPA and BESS. It is unfortunate that YEC's primary rationale for the need for the projects is that it has no other ideas with any reasonable chance of success in the near term.

(b) The effect of the proposed commitments on the rates of customers and the reliability of electricity service provided to customers;

Rates:

30. As presented by YEC, the relative effect on the rates of customers is both unknown and irrelevant. It is unknown, because YEC has chosen to benchmark against a new greenfield plant while simultaneously stating that this plant will not exist. Comparing the EPA to something that will not happen does not give a realistic picture of the effect on rates. A better approach would be to compare to what would actually happen were the EPA and/or other projects to be abandoned or significantly delayed. YEC does not seem to know what would happen. Unfeasible diesel?

31. The effect on rates of the EPA vs unknown alternatives is of course unknown. It is also irrelevant according to YEC, because of a capacity shortfall and has no other viable projects in the near term that will address the issue.

32. "YEC did not undertake any new analysis regarding the diesel rental option. Dependable capacity for thermal generation was benchmarked against other permanent generation options (i.e., new greenfield diesel) and not against a rented diesel option." (B-8, pdf p.743 line 5)

33. Given that YEC has stated that a new greenfield thermal plant will not be built and could not be built in time to address capacity issues, it seems odd to use this as the primary benchmark for finances of the the Project. Is it reasonable or prudent to compare the Project only with an alternative that YEC says cannot and will not happen?

Reliability and Risk:

34. As for reliability, Mr. Hall stated that reliable operation of the Project was implicitly assured by "commercial imperative."

35. "So, you know, you've got a commercial imperative for this proponent to keep the plant operating, and I think that gives some assurance, you know, unless -- because they want to make money. That's what they're in business to do. And so the only way they do that is by keeping -- keep it in operation.

And so you get -- it's an implicit sort of assurance through just the fact that there's that commercial relationship.” (Transcript Vol 1, p. 72 line 17)

36. However, he also acknowledged that this does not actually guarantee reliability.

37. “So if the plant only puts out 50 percent of the capacity that it's designed for, that's what they'll get paid for for that subsequent winter.” (Transcript Vol 1, p. 73 line 4)

38. Mr Hall further undercut the idea that commercial imperative guarantees reliability in noting that the project has already been delayed by a year for because it made financial sense for THELP to delay.

39. “And so what they were -- had initially found is they looked at a compressed project schedule that delivered an inservice date of December of 2024, but there were actually costs involved in compressing the schedule. And they could, you know remove a material amount of costs by actually extending the schedule out to 2025.” (Transcript Vol 1, p. 48 line 7)

40. Relying on commercial imperative means that if THELP has difficulties running the plant at full capacity or finds it financially burdensome to do so, the capacity numbers would not be considered reliable. You are only charged for what you get, but if the shelves are empty you get nothing. A customer willing to pay encourages but does not guarantee a reliable supply.

(c) The capability of existing and currently committed and expected generation and transmission facilities including thermal generation facilities to provide reliable electric power generation to meet the forecast load requirements in subparagraph (a), and the effect the EPA would have on this capability;

41. If all of the currently committed, expected and proposed generation and transmission facilities are completed on time, YEC will meet forecast load requirements. That’s a big “if.”

42. The EPA has already been delayed by a year, and delays of Moon Lake for an as yet undetermined amount of time have also been acknowledged. (Transcript Vol 1 p.51 line 24)

43. “Moon Lake pumped storage is a proposed future project that requires material grant funding to complete feasibility studies, as well as to proceed with actual development – its timing, if it proceeds, is likely to be delayed beyond time forecast in the 10-Year Renewable Electricity Plan.” (B-9 p.11 line 8)

44. However, if projects are not completed on time, YEC does not have a viable alternative. In the worst case scenarios, there is the potential of needing 30 to 46 rental diesels. (B-9 p.11 table) “In additional [sic] to the challenges finding this number of rental diesels, YEC would also face location and connection issues to safely connect diesel rental units to YIS.” (B-5, p.19, pdf p.23)

(d) The risks associated with the agreement, including its potential impacts on YEC and rates for customers and on the reliability of electricity service provide to customers;

45. Reliability based on “commercial imperative” is discussed earlier in this document, starting on line 34.

46. Potential impacts on YEC and the rate base are unknown. “There is some uncertainty with respect to what, if any impact the Amended EPA may have on YECs balance sheet (i.e., rate base). Based on preliminary assessments of the Agreement, YEC has concluded that this transaction does not contain a capital lease and therefore there is no balance sheet or rate base impact. This conclusion, however, is not final. The ultimate impact can only be known when the Project is complete and YECs auditors (the Auditor General of Canada) have reviewed the transaction.” (B-5, p.27, pdf p.31)

47. “The EPA places on THELP all risks related to development of the Project, including permitting, securing necessary grant funding, capital costs to complete, and schedule (including completing all condition precedents needed for the EPA to come fully into force for development of the Project).” (B-9 p.11 line 8) These Risks and the mitigation of these risks are outside of YEC’s control, other than commercial imperative.

48. In these times of unprecedented heat, droughts and floods, there must be some acknowledgment of climate risk. SNC-Lavalin and Knight Piésold’s sophisticated modeling may have been able to estimate flows from 1964 to 2020 based on data from 2015 to 2018, but what of the future? Unexpected records are being set at a dizzying pace.

49. Mr. Hall noted that climate risks have not been considered in this project. “In terms of building their infrastructure to accommodate potential climate change risks, that hasn't specifically been contemplated in...” (feed cut) (Transcript Vol 1, p. 80 line 14)

50. Climate risks and decisions on how to prepare for them are outside of YEC’s control, other than by commercial imperative.

(f) Whether it would be prudent to enter into the EPA as proposed at this time.

51. The board has noted that reasonableness and prudence are relative in nature, and cannot be applied except in the context of relationships with other factors. This from page 3 of Appendix A to Board Order 2022-03, the result of the 2021 GRA hearing.

52. Therefore, presenting this as the “only option” and failing to suggest any any reasonable alternatives does not allow sufficient context to determine if it is prudent or reasonable.

Recommendations:

53. That the Board not consider a new permanent thermal plant to be a reasonable alternative to the EPA, as it has been eliminated from consideration by YEC since 2019. As it is agreed that it will not exist, it should be considered to be the imaginary alternative.

54. That the Board not consider rented diesel as a reasonable alternative, as YEC has provided no business case for it, and admits that it would be difficult or perhaps be impossible on the scale required. This could be called the unknown or impossible alternative.

55. That the Board acknowledge clearly in the report to the Minister that the primary benchmark is a scenario that we know will not happen, and that YEC has provided no business case for any other option.

56. That YEC be directed to provide a business case for the continuing use of rental diesel. If YEC suggests that 35 rental diesels may be necessary if the EPA or Moon Lake is unfeasible or delayed, YEC should have some idea of the feasibility and cost of the alternative. If it is not feasible, it should not be suggested as an alternative.

57. YEC should be directed to benchmark only against alternatives that are viable and feasible. It is difficult to see the value in comparing the EPA with imaginary, unknown or impossible alternatives. Such comparisons should not be considered prudent or reasonable and do not add value to the process.

58. YEC should be directed to undertake more prudent and responsible planning. If the EPA and Moon Lake are delayed, YEC is left with the need of up to 30 rental diesels, which is again, the unknown or impossible alternative. Suggesting unknown or impossible alternatives and having no feasible alternative is clearly not part of a prudent or responsible plan. Was the “only option” of a challenging last minute installation of rental diesels part of a prudent and responsible plan? Could the next “only option,” this EPA, as an “unsolicited proposal” (Transcript Vol 1, p. 72 line 17) be considered good planning on YEC’s part given that THELP has done the bulk of the planning? The “only option” for YEC in this case is THELP’s unsolicited proposal? I certainly appreciate that THELP has done this.

59. Having no arguably feasible alternative is also a clear example of excessive risk that should not be condoned by the Board.

60. That the board not accept YEC’s “only option” style of argument. While YEC seems to have gotten the Board’s approval in the past with this strategy, it shortchanges the Board’s purpose and the process itself.

61. YEC should be directed to provide costing and feasibility for the number of rental diesels required should the EPA and Moon Lake or other projects be delayed or canceled, as these are very real possibilities. The EPA has already been delayed by a year, and Moon Lake “– its timing, if it proceeds, is likely to be delayed beyond time forecast in the 10-Year Renewable Electricity Plan.” (B-9 p. 11 line 10) and the delay of Moon Lake was also discussed at the hearing. (Transcript vol 2 p. 269) Not having a contingency plan would be imprudent and irresponsible.

62. That YEC not be allowed to claim costs for elements of the process that involved the imaginary new thermal plant or the unknown or impossible diesels.

63. That YEC be directed not to reference the canceled 20MW or 12.5MW greenfield thermal plants in future hearings with the board. If YEC has decided that they are not going build these, it seems that suggesting them as viable alternatives and continuing to discuss their merits is a costly waste of everyone’s time. Let’s stick with reality.

64. Similarly, YEC should be directed not to reference unrealistic and unfeasible alternative options. It implies that these are valid options while they are not. If YEC has no idea what to do if projects are canceled or experience significant delays, this should be clearly stated. It is again, a waste of everyone's time to pretend that 30-46 rental diesels is a realistic solution. If YEC is going to suggest alternatives, it would be reasonable to expect the alternatives to be viable and feasible.

Conclusions:

65. The result of this hearing is only as good as the inputs, and the inputs are not good. The Board has been asked to compare the EPA to a theoretical thermal generation facility that all agree will never be built.

66. While I do value imagination in other areas, I am not convinced that the analysis of an imaginary thermal plant is an appropriate use of the Board's time or the that payments made to the lawyers and consultants who have drawn us into this fantasy world is money well spent.

67. Comparing the EPA to possible or likely alternative options would provide a more valuable result. While there may be a business case for an imaginary thermal plant, YEC has provided no business case for any real reasonable (or unreasonable) alternative.

68. In the process of writing my concluding remarks, I remembered that similar ideas was voiced by the Board in Appendix A to Board Order 2022-03, the result of the GRA hearing. The following quotes come from that document, *Section 3, Business case analyses as evidence* on pages 2 and 3.

69. "As noted below, failure to provide an adequate business case results in more information requests from the Board and from interveners, the result of which is almost invariably added expense and delay."

70. "In most cases, the Board, in deciding whether the costs of the utility can be added to its rate base or whether a proposed capital project is justified, applies the criteria of reasonableness or prudence to the subject of the Application. These criteria are relative in nature, i.e., they cannot be applied except in the context of relationships with other factors. This is a principle underlying the Board's repeatedly stated expectation that the significant projects it is called on to assess must be supported by an adequate business case."

71. And it is noted this was also an issue in the 2017-2018 GRA.

"... YEC has not provided a business case in support of this project. YEC did not detail the costs and benefits associated with this project. The Board finds that it is not reasonable for YEC to proceed with the project without a detailed business case that considers the alternatives to the project ... The Board requires a detailed evaluation of alternatives to this project included in the business case."

72. And also from 2018,

"... the Board accepts Mr. Maissan's recommendation that YEC provide a detailed comparison of alternatives for this project, including the pros, cons, capital costs, operating costs and timeline to in-service and justification for its preferred option."

73. And back to 2022,

“Without a proper business case satisfying the criteria just mentioned, the Board is often left with an incomplete presentation that makes it difficult, if not impossible, to determine whether YEC, as the project proponent, has acted prudently or reasonably.”

74. “If this practice of failing to provide adequate business case information and analyses continues, YEC may find itself at risk of the project costs being denied, as well as reduction of the costs claimed in the proceeding.”

75. It is time to take the actions in the last quote. YEC’s consistent failure to present an adequate business case shows a lack of respect for the role of the Board and the process itself. How long will the Board allow this to continue?

Respectfully submitted,

Nathaniel Yee
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