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March 1, 2024

Mr. Richard Buchan, Chair
Yukon Utilities Board
Box 31728
Whitehorse, Yukon Y1A 6L3

Dear Mr. Buchan:

**Re: Yukon Energy Corporation (YEC) 20223/24 General Rate Application – YEC
Opening Statement and Summary Updates**

Please see the attached YEC's Opening Statement and Summary Updates.

If you have any questions, please contact undersigned.

Yours truly,

A handwritten signature in black ink, appearing to read "Jason Epp".

Jason Epp
Vice President, Finance and Chief Financial Officer

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OPENING STATEMENT AND SUMMARY UPDATES

OF

YUKON ENERGY CORPORATION

2023/24 General Rate Application

before the Yukon Utilities Board

March 1, 2024

Introductory Comments

Yukon Energy (YEC) welcomes the opportunity to be before the Yukon Utilities Board (the Board) with our 2023/24 General Rate Application (GRA or Application), for a review by the Board of our revenues, costs, rates and plans going forward, and the changes in this regard since our last General Rate Application for 2021.

YEC's 2023/24 GRA addresses adjustments to our approved revenue requirement and other matters as required to implement overall rate adjustments needed to recover the forecast revenue shortfall in each test year.

Requested Approvals

Yukon Energy's 2023/24 Application filed in August 2023 seeks approval of the forecast revenue requirement of \$81.440 million for 2023 and \$90.425 million for 2024, including approval, as required, of costs, revenues and other related provisions as outlined in the Application. The Application forecast revenue requirement is subject to the updates summarized in Attachment 1 to this Opening Statement.

YEC's Application also includes requested regulatory approvals for a new IPP Purchase Cost Deferral Account, and for a change in Rate Schedule 39 Fixed Charge assigned to industrial customers that use the Mayo-Keno transmission facilities.

Board Order 2023-23 approved an interim refundable rate adjustment rider increase of 10% (Rider J) effective January 1, 2024, to coincide with removal of the Rider F charge, as well as separate interim refundable Fixed Charge amounts for VCG Group and for Hecla Yukon (previously Alexco).

To mitigate customer bill impacts, YEC seeks approval of final 2023/24 GRA rates effective August 1, 2024, to coincide with removal of YEC's 2021 GRA true-up rider.

Context and Cost Drivers for GRA

The factors driving the need for YEC's proposed rates include: (i) steady growth in peak electricity demand, (ii) the need to upgrade or replace aging generation, transmission and distribution infrastructure, (iii) transition from reliance on fossil fuels in Yukon's heating and transportation sectors to clean energy alternatives, and (iv) the impact of rising costs and project complexity.

- **Growth in winter peak electricity demand:** Yukon is experiencing faster growth than any other province or territory in Canada, particularly with respect to winter peak electricity demand. Dawson City provides an illustrative example, where rapid growth has driven the winter peak up to 7 MW – which matches the installed diesel backup capacity in Dawson. This growth drives costs related to diesel rental costs and capital cost rate base additions for dependable capacity (e.g., Thermal Replacement (Faro diesels), Mayo-Faro Diesel Infrastructure, Whitehorse Interconnection, and DSM deferred cost programs related to reducing dependable capacity requirements).
- **Aging infrastructure:** Upgrading and replacing existing electricity assets, while at the same time renewing licences and permits for YEC's existing generation facilities, is critical to ensuring YEC's ability to continue to provide Yukoners with the electricity they need today while building and connecting the new sources of electricity needed in the future. This cost driver is reflected in capital cost rate base additions, costs for overhauls, and deferred cost rate base additions (e.g., relicensing projects), as well as intangible asset rate base additions (EAM and PAMMS).
- **Energy transition:** Yukon's electricity system is in a state of transformation with rapid changes to the way Yukoners both consume and produce electricity. Investments in smart programs and technologies, including demand-side management (DSM) programs, are also needed to better manage and shift system peaks when products like electric vehicle chargers, electric baseboards and water heaters, and heat pumps are used. This is also reflected in IPP cost changes, and capital cost rate base additions for previously disallowed costs for the WH2 Uprate and WH4 Servomotor Replacement projects.

- **Rising costs and project complexity:** More resources are required to direct, plan, execute and oversee the way Yukon Energy does business, to meet the needs of larger projects both in terms of project scope and expenditure, to pursue more projects to connect new customer extensions and distributed energy sources to the grid, and to meet greater stakeholder expectations and involvement in the way our work is done. This includes consideration of inflation, rate changes for fuel prices, long term debt costs, diesel rental costs, and non-fuel O&M cost increase. The complex environment we are operating in also requires additional staff to plan, deliver and oversee more complex projects with multiple groups of rightsholders and stakeholders; to address increased maintenance, environmental monitoring and compliance needs; and to strengthen strategic planning and communications with all levels of government through the energy transition. Accordingly, YEC's proposed rates also reflect an increase in 2024 staff positions compared with 2021 approved (19 FTEs) and forecast vacancies (9 FTEs), as well as rising labour costs (4.5% escalation in 2023 labour rates in Application).

2023/24 GRA Filing and Key Updates

Yukon Energy's Application details the 2023 and 2024 sales, generation and revenue requirement forecasts – including forecast capital costs that will affect rates in the test years – and how these affect the revenue shortfall and proposed rate changes.

Tab 5 of the Application includes business cases for major capital expenditures included in rates in the test years. In preparing this Application, YEC reviewed prior Board Orders and directions related to the adequacy of business cases and has made best efforts to respond to the Board's concerns. YEC has worked to provide better and more fulsome business cases for projects in the Application, and is committed to continuing to find ways to improve the business case information provided to the Board going forward, to better meet the Board's expectations.

YEC responded to information requests from the Board and intervenors on November 29, 2023. YEC also provided additional information in December 2023 and January 2024 in response to intervenor motions and the Board's directions in Order 2023-25. This included responding to the Board's follow-up questions related to YUB-YEC-1-35, and responding to an additional, detailed information request (YUB-YEC-2-1).

Attachment 1 to this Opening Statement also provides a summary of key updates affecting the Application since its filing in August 2023, including updates since filing of IR responses.

Revised IRs and Follow-up Questions

YEC responded to the YUB's revised IRs and follow-up questions related to the diesel rental business case (YUB-YEC-1-35 REVISED), and additional questions from the YUB (YUB-YEC-2-1) related to the business cases for the WH2 Uprate, WH4 Servomotor Replacement, and Enterprise Asset Management (EAM) projects, each of which had some or all of its costs disallowed in the 2021 GRA proceeding.

With respect to the projects that had costs disallowed in the 2021 GRA, YEC's Application and IR responses address why it is appropriate for the Board to approve test year costs for each of those projects, which are shown in the 2023 and 2024 test year as net benefits to ratepayers of each project, and provide a clear justification for the capital costs incurred.

1. The additional evidence provided regarding the WH2 Uprate project shows that the Board should take into account the final 2019 budgeted cost of the Project, which was the result of a much more comprehensive scoping and budget estimate process (including RFPs and fixing of prices and guarantees) than the preliminary high-level estimate that was considered by the Board in the 2021 GRA.
2. YEC has provided detailed evidence for the WH4 Servomotor Replacement project explaining why the actual costs exceeded the original estimate, and demonstrating that costs were prudently incurred, and that the project's benefits are higher than its costs to ratepayers.
3. YEC has also provided additional evidence about the EAM, demonstrating that it is an essential and fundamental part of YEC's multi-year Physical Asset Management Managed System (PAMMS) project, and that its related costs are necessary to align YEC asset management practices with industry standards. In particular, the Board has been provided with a detailed business case analysis (completed by METSCO), which provides expert analysis of the available evidence relevant to assessing expected benefits attributable to PAMMS, including benefits that are specifically attributable to the EAM project.

With respect to the business case for diesel rentals, YEC provided additional information in response to revised IRs of NY (provided on January 4, 2024) as well as YUB-YEC-1-35 REVISED and the Board's eight related follow-up questions (provided on January 18, 2024). These additional responses expand on the information previously provided in Appendix 3.1 of YEC's Application and in YEC's initial IR responses (including YUB-YEC-36(a)), and provide further details of the factors relevant to the business case review of test year diesel rentals. Collectively, all of this information is descriptive of the substance of YEC's internal analysis of the diesel rental option implemented in the current GRA test years.

Intervenor Evidence and Rebuttal Evidence

On January 11, 2024, Nathaniel Yee filed a 28-page submission with the Board, accompanied by 57 pages of supporting documents comprising 22 separate attachments. That submission, together with its attachments, is described as Mr. Yee's Intervenor Evidence. However, Mr. Yee's submission consists largely of argument, making various allegations of fraud against Yukon Energy. As outlined in YEC's rebuttal evidence, YEC disputes all of the allegations included in the NY submission. The NY submission is inappropriate, entirely without merit, and only serves to distract from the real issues that are before the Board in this GRA.

Mr. Yee has also levelled unsupported allegations against reputable and hard-working YEC employees who are individually named in his materials. These personal attacks are inappropriate and unacceptable.

Providing safe and reliable service is the overriding concern that we have – and this drives all of our decision making. With regard to the diesel rentals, the evidence before the Board consistently shows that YEC can and will operate any of its diesel rental units if and when it may become necessary to do so to protect the welfare, health and safety of Yukoners during an emergency. This in fact occurred both in December 2022, when YEC experienced temporary failures of some generation units during a period of extreme cold weather (as reported in response to YUB-YEC-1-35 REVISED, Follow-up Question #3), and once again in January 2024, when an outage event was experienced at the Aishihik Generating Station (as reported in YEC's rebuttal evidence). YEC exceeded its permitted diesel generation capacity in Whitehorse during each emergency in order to protect the welfare, health and safety of Yukoners by ensuring uninterrupted service to customers. YEC has been clear and transparent about this to the Board and to regulators and has acted accordingly.

Conclusion

Yukon Energy's witness panel is here to address any further questions or clarifications on this extensive material on the record for this proceeding.

Not only is this public hearing an opportunity to test our Application – it is also an opportunity to discuss and debate the challenges facing Yukon Energy and its stakeholders.

Attachment 1: Summary Updates Re: YEC 2023/2024 GRA

Updates have occurred to key factors affecting the Application since its filing in August 2023. A summary of key updates is provided below by Tab in the Application.

Tab 3 Revenue Requirement

Updates are provided for IPP generation and Purchase Power Costs, diesel rental costs and business case, and Return on Equity (ROE).

- IPP Generation and Purchase Power Costs** – Updated IPP sales forecasts (GWh/yr) and expected in-service dates for 2023 and 2024 are provided in Table 1 below. This update is due to delays in expected dates for the new IPPs forecast to be in-service in 2023 and 2024. It updates information previously provided in response to YUB-YEC-1-14(a) and in the Application in Appendix 5.1B, Distribution Projects – IPP Connections. Updated IPP purchase prices for 2024 are provided in Table 2 below to reflect the actual 2023 CPI (3.4%) instead of the 2% assumed in the Application. This update is provided as the variances between actuals and approved numbers are dealt with under the proposed IPP Deferral Account, and the update will reduce the needed variance analysis. This reflects the best information available today and is consistent with the requirement in OIC 2021/16 to use available information regarding renewable sources other than hydro when determining LTA annual renewable source availability.

Table 1: Updated IPP Generation for 2023 and 2024

GWh	Expected In Service Date as per GRA	Forecast for 2023	Forecast for 2024	Updated Commercial Operation Dates	2023 Actuals	Forecast for 2024
	Solvest/ North Klondike	In service	1.51	1.63	In service	1.51
Nomad (Mount Sima)	In service	0.22	0.24	In service	0.20	0.24
KDO Dawson Dome Road	In service	0.26	0.25	In service	0.25	0.25
Sunergy 2 MW solar	Jul-23	1.13	2.70	Mar-24	0.00	2.58
Arctic Pharm 2MW solar	Aug-23	1.05	3.63	Apr-24	0.00	3.08
Haeckel Hill West 2 MW wind	Oct-23	0.99	3.95	Mar-24	0.00	3.34
Haeckel Hill East 2 MW wind	Oct-23	0.94	3.75	Mar-24	0.00	3.17
CTMC 2 MW Solar	Sep-24	0.00	0.62	Aug-25	0.00	0.00
NNDC 2 MW Solar	Dec-24	0.00	0.01	Aug-25	0.00	0.00
NNDC 2 MW Solar	Dec-24	0.00	0.01	Aug-25	0.00	0.00
250 kW Solar	Dec-24	0.00	0.00	Canceled	0.00	0.00
		6.10	16.81		1.96	14.29

Table 2: Updated IPP Purchase Prices (\$/kWh) for 2024

\$/kWh	2024 IPP Purchase Prices	
	As filed	Updated
Existing IPPs	0.169	0.171
New IPPs	0.186	0.193

- **Diesel Rental Costs and Business Case** – The following summarizes key updates since the Application, including information provided in IR responses:
 - **2024 rental units** – YEC can confirm today that neither the Battery Energy Storage System (BESS) nor new Dawson diesel generation will be available soon enough to displace forecast diesel rental units in 2024. Accordingly, 20 diesel rental units (excluding two spares) will be required to meet the current N-1 dependable capacity requirement for winter 2024/25.
 - Relocation of two diesel rentals from Faro continues to be planned for winter 2024/25 (reducing Faro diesel rentals from 7 units to 5 units) but YEC has not yet finalized assessments for its decision as to where these mobile units will be relocated.
 - **Operation of Installed Capacity in Emergency** – YEC’s revised IR responses and its rebuttal to NY’s evidence have confirmed that YEC is committed and able to operate installed thermal capacity as required during an emergency, including when it becomes necessary to exceed currently permitted generation capacity at a site to prevent immediate harm to public welfare, health or safety.
 - In its revised IR responses and rebuttal evidence, YEC has described two recent examples of emergency events that required it to exceed the Whitehorse diesel plant’s permitted capacity: in December 2022, when some generation units temporarily failed during a period of extreme cold weather, and again recently in January 2024, when the Aishihik hydro facility was briefly shut down due to frazil ice.
 - **YEC Dependable Capacity Planning Updates** – IR responses have noted that YEC is currently developing a Short-Term Electricity Plan for the next 5-10 years to be released in 2024, as well as a long-term Resource Plan Update to be released in 2025. These updated plans will address dependable capacity planning requirements and options without Moon Lake Pumped Storage (and further options if the Atlin Hydro Expansion does not proceed); they will also address grid transition stability issues with renewable energy generation increases.

- There have been no changes to YEC’s commitment to dependable capacity, or its commitment to developing renewable sources. In this regard, YEC’s updated plans will take into account emerging learnings about possible new options to meet YEC’s objectives, as we did previously when we moved ahead with the earlier 10-Year Renewable Electricity Plan.
 - As part of our normal planning review, the Resource Plan Update will review planning criteria to ensure we are planning in accordance with industry standards and ensuring reliable electricity to Yukoners, including taking into account the isolated nature of the grid and YEC’s experience with recent emergency events.
 - In addition to renewable generation and battery resource options applicable to different sub-regions of the Yukon grid, YEC’s updated plans will also consider the need for additional long-term dependable thermal capacity. This will include further assessment of the full range of options, including short and longer-term rentals, with priority on reliability and safety, as well as cost-effectiveness for Yukon grid customers.

- **Labour** – YEC can confirm that all of the positions to be filled for 2023 and 2024 (excluding the summer students who won’t be hired until approximately May 2024), as described in the Application, have been filled, with the exception of one position that is currently in the active recruitment stage.

- **Return on Equity (ROE)** – Since the YEC GRA filing, the Board has had the opportunity during the AEY GRA proceeding to receive evidence and submissions regarding the recent fall 2023 BCUC decision approving an ROE of 9.65% for both FortisBC Energy (FEI) and FortisBC Electric (FBC). This is higher than the prior FEI benchmark of 8.75% that was referenced in YEC’s Application (Tab 3 and Tab 8). A YUB decision on basic ROE determinations for Yukon is therefore expected in the AEY GRA decision. In this context, it continues to be YEC’s position that its ROE should be higher than the ROE approved by the Board for AEY, to reflect the long-acknowledged higher risks for YEC relative to AEY.
 - **Update since AEY proceeding** – On January 4, 2024, the BCUC issued another decision (Order G-6-24) determining that FEI will be the benchmark for ROE-setting for other BC utilities (excluding FBC). The BCUC also ruled that there could be risk discounts as well as risk premiums relative to the FEI benchmark ROE when determining ROEs for other BC utilities (excluding FBC). No further BCUC decisions on this Stage 2 GCOC are expected until much later in 2024 based on the BCUC’s proceeding schedule.

Tab 5 Capital Projects

Updates are provided for major capital projects (i.e., costs greater than \$1 million) in forecast test year rate base, and for dependable capacity WIP projects not affecting 2023/24 test year GRA rate base.

- **Major capital projects included in forecast 2023/24 GRA rate base** – YUB-YEC-1-65, YUB-YEC-1-67 and YUB-YEC-1-69 provide updates on in-service forecast dates for major capital projects included in GRA test year rate base. These earlier updates are summarized and updated below:
 - **Aishihik Generating Station Five-Year Licence Renewal** (Application, Appendix 5.2A, Section 1)
 - Response to YUB-YEC-1-61(f) provided a corrected total forecast cost at completion for the 5-year licence renewal of \$5.521 million (compared to \$4.479 million in the Application). This includes \$3.303 million closed in 2022, a forecast of \$0.868 million in 2023, and a forecast of \$0.750 million in 2024.
 - **Lewes River Boat Lock Road Access Rebuild** (Application, Appendix 5.1B, Section 13)
 - YUB-YEC-1-65(d) showed this project expected to be in-service in Q4 2024.
 - This project is now expected to be delayed beyond 2024 (i.e., it will stay in WIP for the test years).
 - **Lewes Gate Boat Lock** (Application shows this project remaining in WIP for test years, including \$4.5 million “Contribution” shown in Table 5.7 in Application)
 - Insurance proceeds on Lewes Gate Boat Lock of approximately \$4 million have been received in 2023 (these were the “Contribution” forecast for this project remaining in WIP).
 - YEC is applying to the Board to account for this insurance amount as deferred revenue to be amortized over 72 years, which is the life of the asset class of the Boat Lock. This is consistent with the treatment of the deferred gain on the 1997 Whitehorse fire insurance proceeds as per Board Order 2000-03.
 - **Other Major Projects where update schedule defers in-service beyond 2024**
 - No other major projects with in-service schedule deferral beyond 2024 are identified in YEC’s November 2023 IR responses.
 - **Major Projects where update defers in-service from 2023 to 2024**

- Four major capital projects have been deferred from 2023 to 2024 as outlined in YEC's response to YUB-YEC-1-65(c).
 - **Other Major Project Updates – New Overhaul Major Project**
 - An AH3 overhaul of \$2.2 million that was not included in the Application is to be completed in October 2024 (see Appendix A for summary project description).
 - It is noted that YUB-YEC-1-66(b) updated the DD4 Overhaul (\$0.45 million in Application), deferring it until after 2024.
- **Dependable capacity WIP projects not affecting 2023/24 GRA revenue requirements (BESS, new Dawson diesel, Mayo diesel options).**
 - **Battery Energy Storage System (BESS)** – It is now expected that this project will be constructed in Q4 2024, and that time in 2025 will be needed for commissioning before it can be relied on as dependable capacity. Accordingly, it will not displace rental diesel for winter 2024/25.
 - **Dawson new diesel** – Physical installation of this project is expected before the end of 2024, but uncertainty remains about whether the assessment and permitting for the Callison site will be completed before the end of the year. Accordingly, this project will not displace rental diesel for winter 2024/25.
 - **Atlin Hydro EPA** – YEC expects to be able to provide an update on project funding and feasibility to proceed by June 2024 (i.e. the date that Conditions Precedent have been extended to).

Appendix A – Summary Project Description for AH3 Overhaul

Total costs: \$2,200,000

Expected Completion: October 2024

Background on the Unit

The Aishihik Generating Station is approximately 145 km west of Whitehorse. The power plant is installed approximately 356 ft underground and accessed by a service elevator and crane shaft through a service building on the surface. The station has three Francis hydro turbines generators, AH1, AH2, AH3. AH1 and AH2 are 15 MW vertical units and were originally installed in the 1970s and they have both been fully overhauled over the last two years. AH3 is a horizontal Francis turbine-generator originally installed in 2010. AH3 operates under a rated head of 180.44 m and spins at 900 rpm. The turbine is rated at 7180 kW and the generator has a 8250 kVA rating at 0.85 PF with a 13.8 kV output. The generator is a salient pole unit with a PMG and silicon rectifier. To date, no major overhauls have been performed on the AH3 unit since original commissioning in 2011.

Desired Work Outcomes of AH3 Major Overhaul 2024

In general, YEC plans to achieve the following outcomes during the overhaul to secure an additional 10 years of reliable operation:

- Full disassembly and inspection of turbine and generator. Documentation on the condition and key dimensions and clearances of all major components.
- Replacement of all wear components.
 - Bushings for wicket gates and operating ring.
 - DE bearing thrust pads.
 - O-ring and lip seals for turbine, servo motor, wicket gates, head cover etc.
 - Gaskets
 - Hardware for turbine (bolts, nuts, washers, studs etc) of size under Ø2".
 - Packing rings for turbine shaft packing.
- Offsite refurbishment of turbine components.
 - NDE inspection, dimensional inspection and refurbishment of wicket gates, head cover, runner, links, levers, pins, servo motor, operating ring.
- Onsite refurbishment or replacement of turbine shaft sealing surface, depending on the condition and ease of removal (shaft cannot be removed).
- Disassembly of the generator as much as possible given clearance issues and lifting capacity limitations.
- Refurbishment of NDE and DE bearings (spares are available onsite, however condition is unknown as they were stored outside for many years).
- Fabrication of new thrust pucks for thrust bearing (part of DE bearing assembly).
- Replacement of brake pads, inspection of brake runner/flywheel and brake holder. Replacement of all grounding brushes, slip ring brushes etc.
- Dry ice cleaning of rotor and stator windings.

- This is optional and conditional to the possibility of removing the rotor and shaft to allow cleaning.
- Cleaning of all AH3 Unit and paint touchups as needed.
- Electrical insulation testing of exciter, PMG, rotor, stator, bus bars, bearings.
- Mechanical testing of overspeed trip devices.
- Refurbishment of TIV accumulator system to prevent any further nitrogen leakage (OEM: Vortex Hydro).