### 3.10.2 Are staff aware and procedures in place to respond to a privacy complaint?

Yukon Energy's Privacy Officer is aware of the procedures to respond to a privacy complaint.

### 3.10.3 Identify Privacy Risks/Security Threats regarding Challenging Compliance

Risk	Description
1	Customers of Yukon Energy Corporation are choosing to use the portal service and the project is collecting minimal additional personal information (e.g. email address) therefore no new risks regarding challenging compliance have been identified.

### 4 OVERALL RISK AND MITIGATION

# 4.1 Risk Mitigation Table (PIA manual reference: 6.0 Assessing risk and mitigation strategies)

Please complete the table below. Input all of the risks identified in sections 3.1 to 3.10, identifying any privacy risks associated with the collection, use or disclosure of the personal information involved in this project and stating the mitigation strategies that will be implemented.

For more information, see section 3 in the PIA Manual.

Impact	Risk Reference	e Table	
High	Medium	High	Very High
Medium	Low	Medium	High
Low	Very Low	Low	Medium
Likelihood	Low	Medium	High

The MyAccount project has been assessed by Yukon Energy has having an overall Low Likelihood for privacy risk involving the unauthorized collection, use or disclosure of personal information after the mitigation measures identified in Attachment # 3 are implemented and tested.

If a breach occurred, it is likely to be limited to a small number of clients (users).

Impact on the clients from a breach involving the unauthorized collection, use or disclosure of personal information after the mitigation measures identified in Attachment # 3 are implemented and tested has been determined to be Low. This is based on the minimal number of individually identifying data elements that are being collected and which are not new (additional elements) for the project.

Insert Hyperlink

See Attachment # 2 (STRA) Table 5 beginning on page 18 and continuing to page 21 and Table 8 on page 23, and Attachment # 3.

### Attachments:

- #1 Terms of Use for the MyAccount client portal
- # 2 Security Threat Risk Assessment for the Yukon Energy Corporation MyAccount Client Portal
- # 3 Measures to address vulnerabilities identified in the Security Threat Risk Assessment for the Yukon Energy Corporation MyAccount Client Portal
- # 4 Yukon Energy Corporation Records Management Program Overview RMP-001
- # 5 Yukon Energy Corporation Retention and Disposition Guidelines RMG-001
- # 6 Yukon Energy Corporation Security Procedure RMP-005
- # 7 Yukon Energy Corporation Corporate Administrative Policy 003 Access to Information and Protection of Privacy Act Policy
- # 8 Yukon Energy Corporation Service Policy 004 Personal Information Privacy Customers
- #9 Description of Personal Information Collected (for section 1.1.5 of the PIA)

## 5 SIGNATORIES AND APPROVAL

DM or Delegate	N/A	
	Name, Position	Date
Information Owner		
Stephanie Cunha		
Manager, Communio Yukon Energy	cations & Customer Service	December 18, 2020
	Name, Position	Date
ATIPP Office		
Reviewer		
	Name, Position	Date

To complete the process, a final copy of this PIA (with all applicable signatures and attachments) must be provided to ATIPP office for its records.

Insert Hyperlink

# Attachment 1: Yukon Energy My Account Client Portal – Terms of Use

### My Account Portal Terms of Use

Please read these Terms of Use for our Client Portal ("TERMS OF USE") carefully before accessing or using our client portal website or the related services available on or through that portal website (collectively the "Portal").

BY ACCESSING OR USING THE PORTAL, YOU ARE AGREEING TO THESE TERMS OF USE WITH YUKON ENERGY CORPORATION ("YUKON ENERGY"). IF YOU DO NOT AGREE TO ACCEPT AND ABIDE BY THESE TERMS OF USE YOU SHOULD NOT ACCESS OR USE THE PORTAL.

Yukon Energy may modify these Terms of Use from time to time. Such modifications shall be effective upon posting of the modified Terms of Use on the Portal. Each time you use the Portal, you are agreeing to the version of these Terms of Use current at such time. It is therefore important that you review these Terms of Use regularly to ensure you are updated as to any changes.

### **ELIGIBILITY**

You must be the age of majority in your jurisdiction of residence to access and use the Portal.

### **USER ACCOUNTS**

You may be required to have a user account to use certain functionality or services within the Portal. To create your user account, you may be required to provide certain initial user account details, including username, password and personal information such as your first name, last name, email address, phone number, location, Yukon Energy account and electricity usage information. Please review, verify and update your user account details should changes occur. You are responsible for keeping your user account details current.

You may be permitted to authorize other individuals (such as your family members)

("Authorized Representatives") to use the Portal as part of your user account. You are
responsible for managing your user account, including the issuance and revocation of your

Authorized Representative authorizations. You are responsible for the acts and omissions of your Authorized Representatives.

You are responsible for maintaining the confidentiality of your usernames and passwords. Yukon Energy and its affiliates, officers, directors and employees will not be held responsible for any loss or liability related to or arising from any lost, stolen or otherwise misappropriated username or password.

You agree to notify Yukon Energy immediately of any unauthorized use, theft or misappropriation of your account, usernames or passwords. Yukon Energy and its affiliates, officers, directors and employees shall not be liable for any loss that you incur as a result of someone else using your usernames or passwords, either with or without your knowledge.

You may deactivate your user account at any time, for any reason, by contacting our customer service representatives at 1-867-993-5565.

### PAYMENT INFORMATION

You will have one or more payment options, including debit (namely, your bank account, Visa Debit, and Debit MasterCard), and credit cards (namely, Visa and MasterCard), for making payments through the Portal. If you choose to make a payment through the Portal, you will provide the payment card details, and transactions made using the Portal will be charged to that designated payment card.

Yukon Energy uses third-party payment processors, and you must comply with the terms of all agreements between you and those providers and must deal directly with those third parties to resolve any disputes regarding the processing of your payments. Yukon Energy does not receive or store your payment card details -- this information goes directly to the payment processor. By providing payment card details to our payment processor, you authorize our payment processors to charge all amounts to the payment card number provided to us. If a payment card payment is rejected or refused you will immediately pay the amount due. You represent and warrant to us that each payment card you use for payment to us belongs to you or

your authorized representative, and that you or your authorized representative has the right to charge all such payments on the payment card.

The Portal will not accept all forms of payment (including, certain credit cards). In addition, Yukon Energy reserves the right to change, from time to time, the payment options available through the Portal. Yukon Energy further reserves the right to disable any payment options at any time and for any reason.

When paying with one of the stored payment options, additional third-party terms will apply.

- Visa Debit
- Debit MasterCard
- Visa
- MasterCard

Your use of a payment option signifies your agreement to the applicable third-party terms as well as these Terms of Use.

### **PRIVACY**

Yukon Energy is committed to respecting the privacy of the personal information of the individuals with whom we interact. Yukon Energy has developed various documents to describe our privacy policies and practices and how we collect, use and disclose the personal information of those individuals who use the Portal. Please see our Privacy Policy at <a href="https://yukonenergy.ca/customer-service/accounts-billing/customer-personal-information-and-privacy/customer-privacy-policy/">https://yukonenergy.ca/customer-service/accounts-billing/customer-personal-information-and-privacy/customer-privacy-policy/</a> or further details.

When you use the Portal, you are consenting to the collection, use and disclosure of your personal information for the purpose of providing the Portal to you and your Authorized Representatives and to completing any transactions undertaken via the Portal, as described in more detail in our Privacy Policy.

### ACCEPTABLE USE

You are responsible for the content of any communications by you through the Portal.

You shall not, directly or indirectly, send, submit, post, receive or otherwise facilitate, or in any way use, or permit to be used, the Portal to send, submit, post, display, receive or otherwise facilitate the transmission of any content or materials that in our sole judgment: (i) are abusive, obscene, profane, sexually explicit, threatening, or materials containing blatant expressions of bigotry, racism or hate; (ii) defame, abuse, intimidate, harass, stalk, threaten, or otherwise violate the legal rights (such as rights of privacy and publicity) of others; (iii) discuss or incite illegal activity; (iv) may violate any law (including copyright, trademark and privacy laws); or (v) may give rise to civil or other liability. You shall comply with all applicable laws (including, but not limited to export/import laws and laws relating to privacy, obscenity, copyright, trademark, confidential information, trade secret, libel, slander or defamation). Although the prohibitions and requirements in these Terms of Use do not require Yukon Energy to monitor or policy any communications or materials submitted by you or any other user, and although Yukon Energy is not responsible for any such communications or materials, we may delete any such communications or materials of which we become aware, at any time without notice to you. You acknowledge and agree that you shall be responsible and liable for all uses made by you of the Portal.

You agree that you will not attempt to, nor permit any third party to, enter restricted areas of Yukon Energy information systems or perform functions that you are not authorized to perform pursuant to these Terms of Use. Yukon Energy may, without notice, temporarily suspend your, or any other parties, access to the Portal by deactivating any password(s) or links to the Internet if Yukon Energy reasonably suspects that you, or any other parties, are obtaining unauthorized access to Yukon Energy systems or information, or are using otherwise valid user identifications or passwords in any other unauthorized manner. These suspensions will be for such periods of time as Yukon Energy may reasonably determine is necessary to permit the thorough investigation of such suspended activity.

In addition, you agree that you will not (i) remove or alter any copyright, trademark, brand elements or other proprietary notices; (ii) reproduce, modify, prepare derivative works based upon, distribute, license, lease, sell, resell, transfer, publicly display, publicly perform, transmit, stream, broadcast or otherwise exploit the Portal, except as expressly permitted by Yukon Energy; (iii) link to, mirror or frame any portion of the Portal; (iv) cause or launch any programs

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### **USER MATERIALS**

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Yukon Energy may, at its sole discretion, at any time and from time to time, without notice, suspend your right to use the Portal and/or terminate these Terms of Use or any of the licenses granted hereunder. Without limiting the foregoing, these Terms of Use and the licenses granted herein shall automatically terminate, without notice, if you materially fail to perform or comply with these Terms of Use or any provision hereof. Upon termination of these Terms of Use, you shall immediately cease and desist all use of the Portal.

You may deactivate your user account at any time, for any reason, by contacting our customer service representatives at 1-867-993-5565.

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You also agree that any claims or disputes whatsoever arising hereunder shall be submitted to the exclusive jurisdiction and venue of the courts of the Yukon and acknowledge that you do so voluntarily.

WHERE PERMITTED UNDER THE APPLICABLE LAW, WE EACH AGREE THAT EACH OF US WILL BRING CLAIMS AGAINST THE OTHER ONLY IN OUR INDIVIDUAL CAPACITY AND NOT AS A PLAINTIFF OR CLASS MEMBER IN ANY PURPORTED CLASS OR REPRESENTATIVE ACTION. WHERE PERMITTED UNDER THE APPLICABLE LAW, UNLESS BOTH OF US AGREE, NO ARBITRATOR OR JUDGE MAY CONSOLIDATE MORE THAN ONE PERSON'S CLAIMS OR OTHERWISE PRESIDE OVER ANY FORM OF A REPRESENTATIVE OR CLASS PROCEEDING.

### **GENERAL**

Yukon Energy' failure to insist upon or enforce strict performance of any provision of these Terms of Use shall not be construed as a waiver of any provision or right.

You shall not assign these Terms of Use or any of your rights hereunder without the prior written consent of Yukon Energy.

Your obligations under these Terms of Use will survive the termination of these Terms of Use, or of any license granted under these Terms of Use, for whatever reason.

If there is any conflict between these Terms of Use and any other written and fully-signed agreement between you or your business and Yukon Energy, the latter agreement will prevail.

If any provision or part thereof of these Terms of Use is wholly or partially unenforceable the parties or, in the event the parties are unable to agree, a court of competent jurisdiction, shall put in place thereof an enforceable provision or provisions, or part thereof, that as nearly as possible reflects the terms of the unenforceable provision or part thereof.

### **CONTACT INFORMATION**

For any further information, please contact us at:

Stephanie Cunha Manager, Communications <u>Stephanie.Cunha@yec.yk.ca</u> 1-867-393-5333

Yukon Energy #2 Miles Canyon Road Box 5920, Whitehorse, Yukon Y1A 6S7

# **Attachment 2:**

Make IT Security Threat Risk Assessment (STRA)

Yukon Energy Corp – My Account Customer Website



# Security Threat Risk Assessment (STRA)

Yukon Energy Corp - My Account Customer Website

August 10, 2020



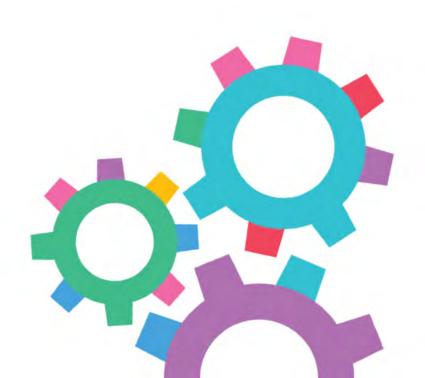
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# ▲ Executive Summary

Yukon Energy Corp. (YEC) engaged Make IT Solutions, to conduct a Security Threat Risk Assessment (STRA) of the My Account web application. My Account is a web application developed by Atco and Wipro Ltd. for "North of 60" (N60) companies (YEC, ATCO Electric Yukon, Northland Utilities), hosted in Oracle Cloud and has the following major business functions for their customers:

- Review account information
- Review energy consumption
- Review payment history and make bill payments
- Request changes to their account
- Make general inquiries

While My Account is not designed as a multi tenant system, some components are shared with logical separation. My Account obtains customer data from ATCO-CIS (YEC's internal customer information system) for display to users. There is no communication back to ATCO-CIS from My Account. Customer payments in My Account use the Moneris payment system which then interacts with ATCO-CIS. When users request changes to their account or make general inquiries, secure emails are generated to YEC customer service staff to manually enter the updated information in ATCO-CIS or to action inquiries.

The assessment focused on asset identification and valuation, threat assessment, vulnerability assessment and the calculation of residual risks. To ensure that through the course of the STRA we had covered the breadth and depth of possible threats and vulnerabilities we focused our assessment in the following areas; Business, Application, Platform and Security Program as follows:

- Business Data, End-Users, Partners, Administrators, Compliance
- Application Environment, Data Processing, Access Control, Application Monitoring
- Platform Network, Hardware/Virtualization, Operating Systems, Data Centre, Infrastructure Monitoring
- Security Program Operations, Change Management, Software Development, General IT Governance

During our assessment, we identified the following vulnerabilities and their associated risk level:

Vulnerability Identified	Risk Level
72(1)(b)(vi)	
72(1)(b) ( i)	

ulnerability Identified	Risk Level
(1)(b)(vi)	
(1)(b)(vi)	

Table 1 – Identified Vulnerabilities and Associated Risk Level

Details to the above vulnerabilities are detailed in the Vulnerability Assessment section, the calculation of the risk rating are detailed in the Risk Assessment section. For each vulnerability finding the impact and recommendation to mitigate the vulnerability are provided in the Vulnerability Assessment section of this report.

# ▲ Project Scope

The STRA focused on the technical and business process implementation of the My Account system and Oracle Cloud environment. Considered in scope for this assessment includes:

- My Account application operating environment
- Oracle cloud infrastructure configuration
- Communications security
  - Web security (HTTPS)
  - API security
  - o Email relay security
- General security policies, processes and procedures

### Out of Scope:

- Software code review
- Moneris payment processing
- ATCO-CIS

The objective of the STRA was to determine the threats, vulnerabilities and identify the residual risks specific to the following security objectives:

- Preserving the confidentiality of sensitive data to ensure this data is adequately protected based on the sensitivity of the information and legislative requirements.
- Ensure the integrity of the information used and stored by the application both in transit and at rest.
- Ensure the continued <u>availability</u> of the services, and information systems and data.

We assume based on the information provided in the vendor technical documentation and interview responses that the application and its open source and/or commercial components have been developed to be secure. Therefore, internal application design, internal application architecture and source code analysis for areas of potential and actual vulnerabilities was deemed out of scope for this assessment.



# Process and Assessment Methodology

The assessment process consisted of:

- Review and analysis of the supplied documentation as per the "Pre-Assessment Information Gathering".
- Perform interviews with IT Management, Vendor Owner/Developer, Project Management and Business Users (see Appendix B for list of those interviewed). The interviews allowed us to identify assets, obtain business and technical context, fill in any gaps in the documentation and gain a better overall perspective of the development and implementation of the application and its operations.

• Assign asset valuation, Identify and analyze threats, vulnerabilities and residual risks, and provide recommendations to mitigate risks identified.

The methodology for this engagement drew upon the *Harmonized Threat and Risk Assessment (TRA)*Methodology – October 23, 2007 as a guide and was tailored for this engagement. The TRA is used by many Government of Canada Departments and was jointly developed, published and issued under the authority of the Chief, Communications Security Establishment (CSE) and the Commissioner, Royal Canadian Mounted Police (RCMP).

Other frameworks which provided support to our assessment included:

### ISO/IEC 27001:2013

Is part of the ISO27000 series of standards and provides guidelines for information security risk management as part of the Information Security Management System. (ISMS). An ISMS is a framework of policies and procedures that includes all legal, physical and technical controls involved in an organization's information risk management processes.

### ISO/IEC 27034:2011

ISO27034-1:2011 provides an overview of application security, including definitions, concepts, principles and the processes involved. Using this standard will help you to ensure that your data is secured within the scope of an ISO27001 information security management system. It covers not only in-house developed application, but also applications purchased or acquired from third-parties or applications where the development is outsourced. This provides a comprehensive approach to application security that can be followed to help you secure them. The standard requires alignment of business objectives with security set of activities and desired deliverables.

### ISACA Information Security Management Audit/Assurance Program

The IT Assurance Framework (ITAF) is a comprehensive and good-practice-setting model. ITAF provides standards that are designed to be mandatory and are the guiding principles on which the IT audit and assurance profession operates.

### • CIS Benchmark Hardening/Vulnerability Checklists

The Center for Internet Security is the primary recognized industry-standard for secure configuration guidance, developing comprehensive, consensus-derived checklists to help identify and mitigate known security vulnerabilities across a wide range of platforms.

Each CIS Benchmark provides prescriptive guidance for establishing a secure configuration posture for your IT Infrastructure, including a detailed description and rationale of potential vulnerabilities together with clear auditing and remediation steps. As such, the CIS Benchmarks are the overwhelming option of choice for auditors worldwide when advising organizations on the adoption

of a secure build standard for any governance and security initiative, including PCI DSS, HIPAA, NIST 800-53, SOX, FISMA, ISO/IEC 27002, Graham Leech Bliley and ITIL.

### • OWASP Web Security Testing Guide

The Web Security Testing Guide (WSTG) Project produces the premier cybersecurity testing resource for web application developers and security professionals.

The WSTG is a comprehensive guide to testing the security of web applications and web services. Created by the collaborative efforts of cybersecurity professionals and dedicated volunteers, the WSTG provides a framework of best practices used by penetration testers and organizations all over the world.

# ▲ Statement of Sensitivity

The sensitivity identification process evaluated how critical the application is to the organization, and the degree to which the information managed by the applications requires confidentiality, integrity and availability. Business representatives of the organization (see appendix B - Interviewees) were interviewed to determine:

- To what degree is the data processed by the application under review considered private / confidential and the impact on the organization if disclosed to unauthorized individuals without proper security clearance.
- The impact on the organization if the information processed by the application under review is corrupted or deliberately manipulated.
- The impact on the organization if the service became unavailable.

The following sensitivity ratings were identified using a scale from low, medium and high to rate the value of the asset.

Asset Class		Sensitivity Ratings
72(1)(b)(vi)		

Table 2 - Asset Valuation

# ▲ Threat Assessment

Threats are described as anything that would contribute to the tampering, destruction or interruption of any service or item of value. For My Account, the service or item of value is specifically the information managed by the application, the application and supporting platform.

Our analysis found several threat events that could conceivably pose a risk to this asset. This analysis is based on our knowledge and experience with the Government of Yukon / Yukon Liquor Corporation threat environment and interviews.

For each of the threats identified we classed the threat as either deliberate or accidental, named the threat agent and described the specific threat event. Each threat was assigned an overall threat level in relation to; C - confidentiality, A - availability and I – integrity.

Threat Class	Threat Agent Category	Threat Event		reat Lev Affecting	
			С	А	- 1
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Threat Class	Threat Agent Category	Threat Event	Threat Levels Affecting		
			С	Α	T
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Table 3 - Threat Assessment

Source: TRA-1 Harmonized Threat and Risk Assessment Methodology; Appendix C-2 – Threat Listing

# ▲ Vulnerability Assessment

## Purpose

The purpose of the vulnerability assessment is to determine the current exposure and whether current controls are sufficient and describes actionable recommendations to reduce the residual risk.

### **Assessment Summary**

### **Data Structures and Types**

- Customer contact information
  - Name
  - Address
  - o Phone Number
  - o Additional account inquiry information
- Customer data
  - Account Number
  - Service ID
  - Service point status
  - Service type
  - o Rate
  - Cycle
  - Use class
  - o SIC
  - o Consumption (up to 24 periods)
- Billing information
  - Account Balance
  - o Bills and payments (up to 24 periods)
  - o Bill delivery method
  - o Pre-authorized payment information

### Data Workflow

- Customer
  - Registers for account
  - o Logs in and reviews information
  - Makes bill payment
  - Makes general inquiry
  - Requests account changes
  - o Receives confirmation emails
- YEC Customer Service Staff
  - o Receive email notifications from My Account.
  - o Makes changes to account as per emailed requests.

- o Phones customer for payment information in case of pre-authorized payment change.
- o Actions / Responds to customer inquiries.

### **Data Location**

- Oracle Cloud Atco tenant Toronto, ON (Production) & Phoenix AZ (DR)
  - o 72(1)(b)(vi)

### Backup and retention capabilities

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### **End-Users**

- Describe and define different types of corporate internal end users
  - None This is a customer portal only
- Describe and define external / public users
  - YEC customers
- Access methods and technologies ie: web, fat client, PC, tablet, smart phone
  - o Web access to secure HTTPS customer portal for customers
- User role capabilities
  - YEC customer Single application role with following functionality
    - Registers for account
    - Logs in and reviews information
    - Make bill payment
    - Make Inquiry
    - Request account changes
    - Receive confirmation emails

- Authentication type Application internal
  - Customer access Local system accounts
    - Password policy 8 characters

### Administrators

- Who / Department
  - Atco / Wipro IT support staff
- Access methods and technologies ie: web, fat client, PC, tablet, smart phone
  - Web access to secured HTTPS website to manage My Account application environment in Oracle cloud
  - SSH access to server instances
- Describe and Define Administrative Users
  - o Administrator Single role
    - Administer Oracle Cloud My Account infrastructure and application
    - Support and maintain application, virtualization, server, storage and network infrastructure
- Authentication type Application internal / Active Directory etc...
  - o Oracle cloud login using Atco Azure Active Directory accounts through Okta with MFA enabled
  - o Oracle WebLogic/Fusion Middleware management and load balancer administration local accounts

### **Integrated Systems**

- Supplies data to the application
  - o ATCO-CIS Customer data for the duration of a session or 30 mins
    - Pulls data via IBM API Connect to the Enterprise Service Bus (ESB) IIB using REST calls
    - Secured using TLS 1.2
    - API is limited in scope to what data can be pulled from ATCO-CIS to prevent mass data pull
  - Canada Post address validation
- Receives data from the application
  - o Office 365 email relay Notification emails
    - Email test shows end to end encryption for emails with PII (Account change requests to YEC customer service staff)
- Process application data
  - None
- Share data with third parties outside of the application (EDI transmissions, FTP file processing, vendor exposed API's etc.)
  - o Payment gateway Moneris

### Compliance

• Industry security standards

- o Application None
- Hosted infrastructure Oracle Cloud is compliant with many industry standard standards and has various third party compliance audit reports available for review – Full list is available: https://www.oracle.com/ca-en/cloud/cloud-infrastructure-compliance/
- Government security regulations, standards, legislation
  - ATIPP Describes the use and management of private information by Yukon public bodies, including YEC.
- Auditing and compliance standards
  - No official standard

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### **Application**

- Environment
  - o Oracle WebLogic 12c cloud compute system
- Supporting database security / connection methods / encryption etc...
  - o Oracle cloud database security model
  - o Encrypted database traffic to/from Java instances
- Development, testing, staging and QA technology/processes/procedures
  - o Test site for customization and testing in Toronto

### **Data Processing**

- Data Entry paths
  - Web entry Human entry to request account changes
- Data Output paths
  - Screen display
  - o Downloadable bill .pdf files retrieved securely from Internet Document Server (IDS)
  - Secure email notifications to YEC staff and customer
- Data Validation
  - o Using field validation with SQL injection protection
  - Web Application Firewall (Oracle Traffic Director) to guard against field exploits

### **Access**

- User Privilege Levels
  - As per above defined roles

• Admin Privilege Levels

72(1)(b)(vi)

- o As per above defined roles
- User identification and authentication requirements
  - o User registration to site with account number and email validation Creates and maintain own password with email validation in case of password change
    - Password/authentication policy Minimum 8 characters, have 2 of 4 character types, no 3 same characters in a row, account locked after 5 attempts.

Application monitoring
72(1)(b)(vi)
72(1)(b)(vi)
Service Level Agreement
<ul> <li>Wipro has a service agreement in place with ATCO to outline services provided to maintain Oracle Cloud environment but it does not include roles and responsibilities for the implementation and maintenance of security.</li> </ul>
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<u>Infrastructure</u>
<ul> <li>Network</li> </ul>

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- Hardware / Virtualization
  - Pracle Cloud hosted systems
    - Oracle Java Cloud virtual servers
    - Database Services
- High availability capabilities
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### Operating Systems

- OS Type / Version
  - o Oracle WebLogic Server Enterprise 12c
- OS Hardening methods
  - o None VMs using Oracle default settings
- Security Context / Active directory Domain, Workgroup etc...
  - o Oracle cloud permission scheme:
    - Local usernames and passwords hashed SHA-512 with 300 rounds Uniquely salted.
    - Encryption and authentication keys used for local communication security.

### **Monitoring**

- Network and System uptime / performance monitoring
  - o Oracle Cloud basic monitoring
- Network and System Security Monitoring / Alerting
  - o Oracle Cloud basic monitoring
- Detection / Alerting of compromised system
  - None

### Vulnerabilities Identified

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### Security Program

• Process for identifying and addressing vulnerabilities in the application.

- Wipro change management process documentation for ATCO addresses security review in approval process for systems changes.
- Process for identifying and addressing vulnerabilities in network and system components
  - o Periodic upgrade of Oracle cloud systems to address vulnerabilities in cloud components described in Wipro service agreement with ATCO.
- System and network administrators access to application's sensitive data.
  - o Sensitive data resides in user sessions only.
- Describe security incident process.
  - o ATCO maintains a formal documented cyber-security incident response plan.
- Incident management process including client notification policy.
  - Wipro has a formal incident management process for ATCO systems with client notification policy.

# Vulnerabilities Discovered - Detailed Breakdown

	Likelihood			
Impact	Low	Medium	High	
High	Medium	High	Very High	
Medium	Low	Medium	High	
Low	Very Low	Low	Medium	

Table 4 – Vulnerability Assessment Criteria

Source: TRA-1 Harmonized Threat and Risk Assessment Methodology; Appendix D-4 – Vulnerability Assessment Criteria
The following table provides the findings for each identified vulnerability:

Finding	Impact	Recommendation	Likelihood	Impact	Vul. Rating
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	1				

Finding	Impact	Recommendation	Likelihood	Impact	Vul. Rating
72(1)(b)(vi)					
72(1)(b)(vi)					

Finding	Impact	Recommendation	Likelihood	Impact	Vul. Rating
72(1)(b)(vi)					

Impact	Recommendation	Likelihood	Impact	Vul. Rating
1				
1, 1				
		Impact Recommendation	Impact Recommendation Likelihood	Impact Recommendation Likelihood Impact

Table 5 – Findings of Vulnerabilities

## Risk Assessment

The following section calculates the residual risk. Residual risk is the product of three variables; Asset Value (A<sub>Val)</sub>, Threat (T), Vulnerability (V).

### Asset Value Rating

The information managed by the application, and supporting platform, for the purposes of this assessment is considered the key asset. The sensitivity analysis has set the asset value as Medium (M).

### Threat Rating

Several threats were identified and listed under the Threat Assessment section. For each threat identified, a threat rating has been assigned based on our knowledge and experience with the Government of Yukon threat environment and interviews. For each threat identified, we have named the threat agent and described the specific threat event. We then applied an overall threat level in relation to; C confidentiality, A - availability and I - integrity. For each grouping of threat agent, the highest threat rating for that group and threat class (deliberate and/or accidental) was used to set the Threat Rating for the purposes of the residual risk calculation.

### Vulnerability Rating

The vulnerabilities identified in the Vulnerability Assessment section and their corresponding vulnerability ratings have been used for the residual risk calculation

For each variable, the corresponding rating was assigned with a numeric score between one and five in accordance with the table below.

Asset Value, Threat and Vulnerability Levels	Very Low	Low	Medium	High	Very High
Score for Risk Computation	1	2	3	4	5

Table 6 - Numeric Scores for Asset Value, Threat and Vulnerability Levels

The score for the computation of residual risk ( $A_{Val} \times T \times V$ ) was then used to determine the basic risk score which correspondence with a risk level as per the table below.

Basic Risk Score	1-4	5-12	15-36	40-75	80-125
Risk Level	Very Low	Low	Medium	High	Very high

Table 7 - Risk Levels

Source: TRA-1 Harmonized Threat and Risk Assessment Methodology; Annex E - Calculation of Residual Risks

The following table provides the final Risk Level for each identified vulnerability:

Associated Threat	Threat Rating	Related Vulnerability (2)	Vul. Rating	Residual Risk (A <sub>Val</sub> × T × V)	Risk Level
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				B	

Table 8 – List of Assessed Residual Risks

Source: TRA-1 Harmonized Threat and Risk Assessment Methodology; Annex E - Calculation of Residual Risks

# ▲ Appendix A – Vulnerability Likelihood and Impact

## Vulnerability Probability

Safeguard Effectiveness	Associated Vulnerabilities	Probability of Compromise
	72(1)(b)(vi)	

Source: TRA-1 Harmonized Threat and Risk Assessment Methodology; Annex D - Vulnerability Assessment, Table D-2

Vulnerability Impact

Safeguard Effectiveness	Associated Vulnerabilities	Severity of Outcome
	72(1)(b)(vi)	

Source: TRA-1 Harmonized Threat and Risk Assessment Methodology; Annex D - Vulnerability Assessment, Table D-3

# ▲ Appendix B – List of Interviewees

Person	Position
Stephanie Cunha	Manager, Communications   Yukon Energy Corp.
Brian Hoang	Integration Manager   ATCO
Kirk Morris	Enterprise and Solution Architect   Wipro/ATCO
Sylvia Adams	Supervisor, Customer Accounting and Administration   ATCO Electric Yukon

# ▲ Appendix C – Qualys SSL Labs Reports

[Reports follow on next page]

## Attachment 3:

Measures to address vulnerabilities identified in the Security
Threat Risk Assessment for the Yukon Energy Corporation
MyAccount Client Portal



## **Attachment 4:**

Yukon Energy Corporation
Records Management Program Overview RMP-001



## CORPORATE ADMINISTRATION POLICY CA-001

DEPARTMENT:	INQUIRIES TO:	TOPIC;
All	Corporate Secretary & Admin. Records	Records Management Policy
ISSUED:	REVIEW DATE:	APPROVED BY:
June 2016	May 2019	President & CEO

## 1.0 Purpose

- 1.1 The purpose of this policy is to define and implement a recorded information management program to ensure that authentic, reliable and usable information is created, managed, preserved and made available to support the organization's activities. This policy includes procedures:
  - To record the creation, capture, classification, scheduling, storage, retention, preservation, destruction, archiving and security of records;
  - · To ensure preservation of records of vital value; and
  - To support the protection of privacy throughout the Corporation.
- 1.2 Records are essential to the Corporation's business and therefore must be protected and managed to comply with legislative requirements and generally accepted standards. All records created and received by employees and agents of Yukon Energy are the property of the Corporation. Yukon Energy's Records Management Program ensures that the legal, regulatory, administrative and operational record keeping requirements of the Corporation are met and provides all departments with the structures, standards, tools and procedures that are required for effective and compliant records management.

## 2.0 Definitions

Active records - records needed to perform current operations and are subject to frequent use and usually located near the user or accessed electronically.

**Disposition** - the actions taken with regard to records as determined through their appraisal. Actions might include transfer to storage, destruction, or preservation for archival purposes.

Inactive records - records that do not have to be readily available, but which must be retained for file retention; legal, fiscal, or historical purposes.

Full Retention - records that have been designated for continuous preservation because of reference, historical, or administrative significance to the Corporation.

**Records** - information created, received, and maintained as evidence and information held by an organization or person in pursuance of legal obligations or in the transaction of business. Data held in various formats.

**Records management** - the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposition of records,

including the processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records.

**Records Retention Schedule** - a comprehensive list of records series primaries and file titles, indicating the length of time it is to be managed and maintained. Will include retention in active office areas, inactive storage areas, and when and if such series may be destroyed or formally transferred to another entity such as an archives for historical retention and preservation.

Transitory/temporary Records – include drafts, copies, voice recordings or short-term information. Transitory records are normally not classified or managed as part of the records management program, but are maintained, secured and destroyed according to information privacy and security standards. Transitory records are destroyed after the actions to which they relate or immediate purposes are completed.

**Restricted** - information available only to authorized persons.

**Need to know** – the legitimate requirement of a person or organization to access specific information to carry out official business.

## 3.0 Policy

- 3.1 This policy applies to:
  - All records created or received by employees, board members, contractors, and others
    providing services and acting on the Corporation's behalf in a variety of physical
    forms (paper, digital, audio-visual, and graphic) are the property of the Corporation
    and subject to its overall control; and
  - All sites, facilities, equipment, services required to collect, manipulate, transport, transmit or keep corporate information.
- 3.2 All Corporate records are classified according to the Corporation's Records Classification System (RCS). The RCS is used to establish and implement standards for records filing and storage, retention, restriction, essential/vital, whether the records are filed centrally or within individual departments or work spaces.
- 3.3 The Records Retention Schedule defines the length of time that specified types of records will be retained in their active and semi-active phases after which they will either be destroyed or sent for full retention. Record retention is based on: legal, regulatory, administrative, operational requirements and the historical value of records. No records are transferred or destroyed without appropriate approvals. Corporate records are held only in those facilities authorized by Yukon Energy.
- 3.4 Electronic records are a routine part of business operations. Employees will ensure that electronic records including e-mail messages are printed to paper and filed in the records centre. All corporate documents should be accessible. Security includes both the

protection of restricted information and the assurance that data cannot and has not been altered.

- 3.5 Tracking controls are implemented as part of the RCS to:
  - Locate both active and inactive records;
  - Ensure that others know when a file is out, as well as aid with efficient refilling; and
  - Monitor use and changes to documents to protect confidentiality and integrity of information.

## 4.0 Roles & Responsibilities

## 4.1 Employees

- Creates stores and manages documentation in their possession according to records
  policy, practice and procedures. Ensures the dispositions of records are in compliance
  with the Corporation's Records Classification System and Records Retention
  Schedule.
- Manages records to ensure they are properly stored and can be retrieved efficiently.

## 4.2 Department Heads

- Ensures that the information received and produced by employees within the department is accurate, accessible and managed in compliance with the Records Classification System;
- Ensures transitory/temporary records that are not designated to be sent to inactive records storage are destroyed in accordance with the Records Retention Schedule;
- Informs the records management personnel of any key records not included in the Records Retention Schedule.
- Approves the destruction or transfer of departmental records that have fulfilled retention requirements as set out in the Records Retention Schedule;

## 4.3 Records Management Personnel

- Provides training for new users:
- Provides users with records management support and guidance;
- Evaluates suggested classifications and incorporates the necessary classifications into the Records Classification System;
- Assigns and updates retention dates and disposition requirements in accordance with legislative and operational changes;
- Facilitates and maintains services for off-site storage of all records.

## 5.0 Privacy

5.1 It is the responsibility of all those acting on the Corporation's behalf to ensure that the appropriate security measures are observed for maintaining records containing restricted, personal or other confidential information. Such records, scheduled for destruction, must be disposed of in a secure/restricted setting. The Records Management Analyst will assist as required to ensure compliance with Corporate and Legislative requirements.