

FORM A

Proceeding:.....

ACKNOWLEDGMENT OF EXPERT'S DUTY

1. My name isSteven J. Morris.....(*name*). I live at ..Montgomery... (*city*), in the ..state..... (*province/state*) of ..Texas..... .
2. I have been engaged by or on behalf of ..Torys LLP..... (*name of party/parties*) to provide evidence in relation to the above-noted proceeding before the Ontario Energy Board.
3. I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
 - (a) to provide opinion evidence that is fair, objective and non-partisan;
 - (b) to provide opinion evidence that is related only to matters that are within my area of expertise; and
 - (c) to provide such additional assistance as the Board may reasonably require, to determine a matter in issue.
4. I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.

Date ..June 17, 2019.....


Signature

Steven J. Morris

Summary and Background

Mr. Morris is a Vice President of UMS Group. He has 31 years of consulting and management experience with the last 24 years spent in the electric and gas utility industries. He has significant expertise in asset management, performance improvement, organizational design, and strategic planning, and has written/edited dozens of analytical reports on utility industry topics.

Mr. Morris is the North American leader of UMS' Asset Management solution. He has assisted numerous electric and gas utilities in assessing and implementing PAS 55 and ISO 55000-based organizations and competencies. He is also the corporate leader of UMS' Global Learning Consortium solution which provides facilitated research and sharing to assist utilities in understanding industry trends, practices, and benchmarks. In particular, he created and oversees the North American Substation Best Practice collaborative, a utility-directed community which identifies and shares best practices in substation maintenance, construction, and asset management.

Prior to joining UMS, Mr. Morris worked for both Andersen Consulting and Navigant Consulting. He also founded Research Reports International, a business focused on providing data and information on key issues facing the industry to electric and gas utility executives.

Mr. Morris holds a B.A. in Economics and an M.B.A., both from Cornell University.

Highlights of Experience

Asset Management

- Led an Asset Management Gap Assessment for the Transmission and Distribution Business Units for a Southwestern Electric Utility. Evaluated their current asset management-related functions against the ISO 55001 standards. Performed workshops with utility personnel to educate them on the standard and asset management best practice. Developed recommendations around the Operating Model, Processes, Enabling Technology, and Competencies needed for creation of an asset management organisation within the company.
- Led an engagement for a Western Electric Utility to develop a methodology for performing Risk Forecasted Capital Spending analysis. Developed models to support investigation of the effects of changing levels of capital spending on risk over time for three asset classes – power transformers, circuit breakers, and relays. The models were based on determining capital spend levels for replacement of aging assets based on the monetized risk. The models also support “what if” analysis on the level of risk and spending incurred over time for different spending and risk targets.
- Led an Asset Management Gap Assessment for the Transmission and Distribution Business Units for a Canadian Electric Utility. Evaluated the current state of asset management against the IAM Maturity Model and industry best practice. Developed a series of recommendations for closing the gaps and worked with the client to develop a

strategic roadmap for implementing the recommendations to improve their asset management capabilities.

- Led a multi-year Asset Management Transformation for the Transmission Business Unit of a large Southern, multi-state electric utility. Project required creation of an Asset Management organization and development and implementation of all capabilities needed to meet ISO 55001 competence requirements. Specific deliverables included AM Policy, AM Vision, Strategic Asset Management Plan, Asset Risk Assessments, Asset Management Plans, AM Training Program/Material, Economic Lifecycle Models, Data Architecture, and Performance Management Framework.
- Led an effort to develop an Enterprise Asset Management function for a Canadian Electric Utility. Performed an assessment of the current operating groups' asset management capabilities (Generation, T&D, Fleet, and Facilities) to understand both their absolute maturity, as well as the comparative maturity between the different functions. Defined a new Operating Model for a combined enterprise-level AM function, identified and prioritized recommendation to applying a consistent approach to asset management and filling gaps against best practice, and developed a multi-year plan for implementing the recommendations. He is currently working with the client to implement targeted recommendations in terms of developing processes, technology, and internal capabilities.
- Performed an ISO 55001 "checkpoint" assessment for the Distribution Business Unit of a Canadian Electric Utility. The assessment was conducted in the manner of a mock certification audit in order to determine how close the utility was to ISO 55001 compliance and what gaps against the standard remained.
- Provided an independent, third-party assessment supporting a Rate Application Filing for a Canadian Electric Utility. Evaluated whether the aspects of the asset management system relevant to the development of the Capital Plan were in alignment with industry standard practices per ISO 55001. Prepared a written report which was submitted as direct testimony, provided direct and rebuttal testimony at rate hearings, and supported outside counsel in the preparation of final briefs.
- Led a project to assist a West Coast Electric Utility in improving its Asset Management capabilities. This multi-pronged project included 1) conducting a Senior Leadership Workshop to educate top management on key Asset Management principles, 2) conducting an on-site, in-depth Gap Assessment of the current state of the Asset Management program versus the IAM Asset Management Maturity Framework, 3) defining alternative models for closing the identified gaps and developing business cases for each alternative, and 4) providing a high-level Roadmap for successful implementation.
- Led an ISO 55001 AM Gap Assessment for a West Coast electric utility's Generation business unit. Performed an assessment at both the business unit and plant level identifying both gaps and differences in practices. Following completion of the Gap Assessment, led a significant number of Business Unit staff through a 2-day workshop to familiarize them with AM concepts and link them to the findings of the gap assessment. Led the development of a detailed implementation plan to execute a complete Asset Management Transformation for the organization. This plan included identifying all tasks for the 11 work streams needed to close the AM gaps, resource loading those tasks, developing a detailed project schedule for those tasks, and costing out the tasks. Deliverables included development of an Excel model that calculated time and cost trade-

offs between use of internal and external resources at the work stream level for each asset class. The end result was a 9000 line item Project plan with a 3 ½ year time frame and 50,000 man-hours of work identified.

- Led a project for a major West Coast combination utility to develop skills and competencies in Asset Management for Transmission and Distribution. Performed 2-day Asset Management Workshop for 30 client managers and engineers. Developed template and process for creating Asset Life-cycle Strategies and supported client Asset Strategists in creating the first two strategies, Distribution Wood Poles and Substation Transformers.
- Led a project to develop a Spare Transformer Optimization model for a Midwestern electric utility. Leveraged client's existing asset health assessment and transformer criticality assessment work to develop an economic model projecting risk from failure for each of 500 substation power transformers. Modeled economic impact on families of transformers for different numbers of spares to identify optimal economic number to hold for each family.
- Led a project to develop and implement an economic modeling tool and process to support a Canadian Gas utility's natural gas distribution and storage assets. Developed failure curves, identified degradation factors, and developed AHI formulations for 33 asset sub-classes. Developed economic model to link AHI, failure probability, risk, consequence, and intervention costs into an analysis of optimal life cycle replacement. Defined processes for implementing, operating, and updating overall framework and methodology for ongoing use in rate cases development, capital planning, and asset management decision-making.
- Led a project to develop and implement a process and analytical tools to support decisions related to the health of a West Coast utility's substation assets. Identified the customized functionality necessary for existing asset health indexing (AHI) tool in order to provide the decision support capabilities required. Developed algorithms for determining effective age and identified the sources of input data needed for the model. Defined failure modes and assessed impact of failure. Defined and map the processes needed to make optimum use of the tool.
- Led an Asset Management Gap Assessment for a Canadian Crown Corporation Electric and Gas Utility. Performed a corporate-level assessment and individual assessment for the Generation, Transmission, and Distribution business units against ISO 55001. Identified gaps and developed prioritized recommendations for closing the gaps. Performed a Work Shop for Executive Leadership to educate them on Asset Management, discuss the recommendations from the assessment, and review options for organizational structure of Asset Management.
- Led an Asset Management Gap Assessment project for a large Northeastern combination (gas & electric) utility. Reviewed all aspects of current asset management practices against the ISO 55001 standard in order to identify gaps in processes, practices, data, technology, organization, and competencies. For gaps identified, assessed cost, difficulty, and impact of implementation, and created a roadmap structured around designing the needed changes, implementing the changes and working the new processes, and becoming excellent at Asset Management.

Recent Publications/Presentations

- Customer Benefits Realization through Effective Asset Management, WEI Operations Conference, Vancouver, BC, April 24-26, 2019
- The Development of a Proactive and Predictive Integrity Management Model, World Gas Conference, Washington, DC, June 25-29, 2018
- ISO 55000 Certification Panel, WEI Operations Conference, Phoenix, AZ, April 25-27, 2018
- Real World Experience in Developing Asset Management Plans, CEATI Strategic Asset Management Conference, Vancouver BC, November 1-2, 2017