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OE PATH 2 ALTERNATE RULES REVIEW

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EXECUTIVE SUMMARY

In 2021, the Minister of Public and Business Service Delivery (MPBSD), (formerly the Government and Consumer Services), reached out to Technical Standards and Safety Authority (TSSA) requesting an independent assessment of the effectiveness of Operating Engineers (OE) Path 2 Alternate Rules processes by the Chief Safety and Risk Officer (SRO). The review provides an independent perspective on how well the Path 2 approach is meeting its objective of fostering risk-based regulation while upholding a robust safety regime. It specifically evaluates the effectiveness of the guidelines to the industry, the application processes and TSSA's regulatory oversight.

The timing of this review is particularly beneficial. The Path 2 approach, reflecting the principles of outcome-based cooperative regulation and rooted in process safety management, aligns well with TSSA's evolution as a modern outcome-based regulator.

While the approval of three plants suggests that the Path 2 Alternate Rules approach is maintaining a robust safety environment with the flexibility of a customized risk-based approach, the limited sample size makes it challenging to draw definitive conclusions.

Observations and recommendations address key challenges with TSSA's current implementation of Path 2, such as the time and effort required to prepare applications, the interpretation of existing guidelines, RSMP evaluation practices and the lack of communication and feedback mechanisms.

TSSA is appreciative of the feedback from industry stakeholders and is committed to carefully reviewing the recommendations. It will use the input received to inform any considerations for improvements or enhancements to the application and review process. A noteworthy observation from this review was the enthusiasm shared by industry stakeholders regarding the Path 2 approach and their eagerness to support TSSA's efforts in advancing this initiative. By addressing these observations and recommendations, TSSA can continue to strengthen its role as a modern outcome-based regulator, fostering a collaborative and safety-focused environment.

INTRODUCTION

In 2021, the Minister of Public and Business Service Delivery (MPBSD), (formerly the Government and Consumer Services), reached out to Technical Standards and Safety Authority (TSSA) requesting an independent assessment of the effectiveness of Operating Engineers (OE) Path 2 Alternate Rules processes by the Chief Safety and Risk Officer (SRO)¹.

Under Path 2, plant owners must develop a site-specific Risk and Safety Management Plan (RSMP) for TSSA's review and approval. The plan must provide evidence to support the plant's ability to maintain safety, based on an acceptable risk level. Path 2 plants are subject to regular TSSA inspections and audits.

This review by the SRO provides an independent perspective on how well the Path 2 approach is meeting its objective of fostering risk-based regulation while upholding a robust safety regime². The goal was to evaluate the effectiveness of TSSA's Path 2 Alternate Rules processes, focusing on the guidelines to the industry, the application processes, and the regulatory oversight of plants.

The timing of this review is particularly beneficial, offering insights to guide TSSA as it continues to evolve as a modern outcome-based regulator. As regulatory practices have shifted over the past few decades from strict enforcement to a more engaged and supportive approach, the Path 2 approach reflects this transformation. It aligns with the principles of outcome-based cooperative regulation and is rooted in process safety management (PSM). Research spanning decades has shown the limitations of traditional compliance practices in reducing harm and protecting society, underscoring the value of embracing the PSM approach supported by strong organizational and cultural practices.

While the implementation of Path 2 may have started gradually, TSSA has experience from the past few years upon which to build and enhance the approach. A noteworthy observation from this review was the enthusiasm shared by industry stakeholders regarding the Path 2 approach. Many stakeholders expressed their excitement and eagerness to support TSSA's efforts in advancing this initiative. Refining and developing the OE Path 2 approach will strengthen the implementation of Path 2 type approaches to other safety areas and further solidify TSSA's role as a modern, outcome-based regulator.

¹ Refer to Appendix A- Background for additional information on Path 2.

² Refer to Appendix B – Review Methodology for additional details.

OBSERVATIONS AND RECOMMENDATIONS

Building on the insights gained from the review, the following section presents key observations and recommendations that emerged during the assessment of the Path 2 Alternate Rules processes.

These observations are intended to offer practical guidance for enhancing TSSA's regulatory approach, ensuring it remains effective and aligned with the evolving needs of the industry. By addressing these observations, TSSA can continue to strengthen its role as a modern outcome-based regulator, fostering a collaborative and safety-focused environment.

STRATEGIC ALIGNMENT

OBSERVATION:

While the Path 2 approach offers clear benefits in enhancing public safety and providing greater flexibility for OE industry partners, there have been only four applications since its implementation in October 2020, with three approved as of this review. Several factors seem to be contributing to this, including the limited promotion of the Path 2 approach to the industry and the uncertainty plants face regarding the approval process, given the time and financial investment required. This is compounded by TSSA's staff shortages, turnover, and competing priorities over the last few years.

RECOMMENDATION:

As TSSA continues to evolve as a modern, outcome-based regulator, it should actively encourage plants to apply the Path 2 Alternate Rules to enhance safety.

GUIDELINES TO INDUSTRY

OBSERVATION:

Feedback from the OE industry indicates that the TSSA Implementation Guide for submitting a Path 2 application lacks clarity. For example, the Implementation Guide notes that the application package should be as "...comprehensive as possible ..." and that "...the amount of analysis and planning in the RSMP will be commensurate with the industrial facility's public safety risk as determined by the risk assessment"⁴. The absence of guidance on what constitutes a "comprehensive" level of detail, as well as the unclear criteria for evaluating applications, left

³ Technical Standards and Safety Authority, Operating Engineers Safety Program, Path 2 Risk & Safety Management Plan (RSMP) Implementation Guide, Version 0.97 Nov 2, 2020, Pg 26

⁴ Technical Standards and Safety Authority, Operating Engineers Safety Program, Path 2 Risk & Safety Management Plan (RSMP) Implementation Guide, Version 0.97 Nov 2, 2020, Pg 14

applicants uncertain as to the content of their application. This uncertainty may be discouraging potential applicants from pursuing the process.

RECOMMENDATION:

To enhance the clarity of expectations and the effort required for Path 2 applications, TSSA should seek input on revising the Implementation Guide from previous successful applicants and industry stakeholders experienced in risk-based regulation and the CSA Z767-17 Process Safety Management standard.

APPLICATION PROCESSES – PREPARING THE APPLICATION

OBSERVATION:

Successful applicants pursued Path 2 approval because the PSM benefits aligned well with their plant's strategy and future operations. Preparing the application, which took up to a year, necessitated hiring external experts to supplement in-house expertise and ensure all technical aspects were thoroughly addressed. While the Implementation Guide was a constant reference throughout, applicants had to make assumptions about the required level of detail and documentation required to meet the condition that *"Acceptance and approval of the RSMP depends upon the due diligences, completion and the adequacy of risk mitigation strategies."*⁵

While preparing their submission, applicants were uncertain about the approval outcome, which, combined with the significant effort required, may deter some facilities from pursuing the Path 2 approach.

Additionally, after submission, applicants were asked for more information, leading to confusion about the application requirements. This uncertainty was further compounded by a lack of communication from TSSA regarding application status and approval timelines. Although applicants could reach out for updates, written feedback was seldom provided, and the timing of approval remained unclear.

RECOMMENDATION:

Given the significant time and effort plants invest in completing the Path 2 application, TSSA should gather feedback from applicants and industry stakeholders. Their insights could help refine the process, making it more efficient and streamlined while maintaining the commitment to risk-based regulation and safety.

⁵ Technical Standards and Safety Authority, Operating Engineers Safety Program, Path 2 Risk & Safety Management Plan (RSMP) Implementation Guide, Version 0.97 Nov 2, 2020, Pg 26

To reduce uncertainty, TSSA should consider adopting a phased approach to the application process. This would allow plants to receive guidance and written feedback at each stage, helping them decide whether to proceed to the next phase.

Effective communication is essential to reducing uncertainty and setting clear expectations. TSSA should develop a comprehensive communication plan that promotes the Path 2 approach and guides applicants through to successful implementation.

APPLICATION PROCESSES – TSSA REVIEW AND APPROVAL

OBSERVATION:

Once submitted to TSSA, the application undergoes multiple reviews, starting with an initial completeness check, followed by technical, inspector's and chief's reviews.

The Path 2 approval depends on the successful completion of a detailed technical review that "... examines whether the RSMP being submitted has considered and followed all of the requirements in line with the Standard..."⁶. The technical review results are critical and relied upon by the inspectors and Chief Officer to provide assurance on the adequacy of the risk mitigation strategies. Initially, technical reviews involved engineering and risk expertise. However, due to staff shortages, turnover, and competing priorities, the responsibility has shifted to a single individual in the risk department.

Recently, TSSA enhanced its quantitative risk assessment capabilities with new software to support a more rigorous evaluation. However, because each RSMP is site-specific, the review process still requires judgment in assessing the policies, procedures, technical specifications, and risk assessments. Reliance on a single reviewer poses the risk that judgment could be flawed, or details overlooked, potentially leaving safety risks inadequately mitigated.

The time required to complete the technical review varies based on the completeness of the application, often necessitating requests for additional documentation or clarification.

RECOMMENDATION:

To maintain the integrity and objectivity of the technical review process, TSSA should implement a quality assurance review. This would ensure that conclusions consistently align with the documentation and evidence provided.

⁶ Technical Standards and Safety Authority, Operating Engineers Safety Program, Path 2 Risk & Safety Management Plan (RSMP) Implementation Guide, Version 0.97 Nov 2, 2020, Pg 26

OBSERVATION:

The TSSA oversight process for Path 2 regulated facilities is still evolving and is expected to strengthen as more audits are conducted. The Implementation Guide indicates that audits are intended to review the implementation of procedures, including the results of the plants' internal audit of their PSM program.

Implementing Path 2 requires a shift in perspective for both facilities and regulators. The PSM approach embedded in Path 2 allows plant owners the flexibility in managing safety risks by adhering to a set of principles and systems. This approach broadens the focus beyond technical controls to include organizational and cultural factors that contribute to a safer environment.

It is unclear if TSSA inspectors have the necessary training or tools to verify that the documented RSMP is being followed or if there has been any erosion in safety practices. Even when facilities adopt a PSM approach, organizational behaviors and culture can undermine safety if not properly managed. To ensure plants are fully compliant with their own RSMP, inspectors will want the skills to assess these critical elements.

The Implementation Guide mentions that if an audit is unsuccessful, TSSA will take follow up actions, potentially including revocation of the plant's Path 2 approval status. However, the specific response required from TSSA or the plant, is not clearly defined, leaving uncertainty whether approval would be immediately rescinded or if there is flexibility for the plant to address the issues.

While Path 2 emphasizes a transparent partnership between TSSA and plant owners, the term "audit" is often associated with traditional compliance practices rather than the spirit of collaboration. Additionally, although the effectiveness of the Path 2 approach in preventing harm can be measured through performance indicators in the RSMP, there are concerns that TSSA's current customer relationship management (CRM) system may not be equipped to gather the crucial data needed to evaluate whether risk exposure is shifting as the plant adheres to its RSMP.

RECOMMENDATION:

To strengthen regulatory oversight, TSSA should:

- Consider removing the word "audit" and embedding "audit" activities within periodic inspections to confirm plant compliance with their own RSMP.

- Provide inspectors with the necessary training and tools to effectively assess compliance with the RSMP.
- Clearly define the consequences for plants that fail to comply with their RSMP.
- Evaluate the CRM system's ability to collect data on existing or changing risk exposure.

TSSA MANAGEMENT RESPONSE

We appreciate all the feedback and input that was provided by stakeholders from industry and internally and acknowledge the observations and recommendations provided by the SRO.

With regards to providing more details as to how the application will be assessed, TSSA acknowledges that is challenging because the RSMPs are highly specific and customized to each plant's operations and safety management practices. There is no one-size fits all because the plants vary greatly in size, capacity, industry, location, and other factors that determine the details of the application.

The intent of Path 2 is to provide industry with options for a more outcome-based approach to safety and risk management, not to prescribe a certain approach. The guidelines are designed to provide sufficient information for applicants to prepare an application but without prescribing the contents of a plant's RSMP.

Promotion of the Path 2 process should be done as part of broader compliance education campaigns so as to not give the impression that TSSA favours one Path over another. The focus of the education should be on clarifying requirements and guidelines and providing support, rather than encouraging plant owners to apply.

We acknowledge that this being a new program, TSSA has not been able to provide an expected turnaround time on the review of the applications. TSSA will take under consideration how to improve the communication and engagement with applicants to avoid long wait periods and confusion on the status of open applications.

We continue to be committed to carefully reviewing the recommendations and use the input received to inform any considerations for improvements or enhancements to the application and review process.

CONCLUSION

The TSSA Path 2 Alternate Rules approach represents a shift towards a modern, cooperative regulatory model. It is well suited to TSSA's current direction as it moves away from traditional compliance practices and embraces the PSM approach supported by strong organizational and cultural practices.

While the approval of three plants suggests that the Path 2 Alternate Rules approach is maintaining a robust safety environment with the flexibility of a customized risk-based approach, the limited sample size makes it challenging to draw definitive conclusions.

Observations of this review revealed key challenges with TSSA's current implementation of Path 2, such as the time and effort required to prepare applications, the interpretation of existing guidelines, RSMP evaluation practices and the lack of communication and feedback mechanisms.

Recommendations aimed at addressing these challenges include adopting a phased application approach to reduce uncertainty, implementing quality assurance reviews to uphold the integrity of technical reviews, providing training and tools for effective regulatory oversight, and developing a comprehensive communication plan.

The excitement by industry stakeholders and successful applicants eager to assist TSSA in strengthening their Path 2 implementation is inspiring. By tapping into their expertise and addressing these areas, TSSA can streamline the application process, enhance regulatory oversight, and better support plants in successfully implementing Path 2. These improvements will reinforce the Path 2 approach, further aligning it with TSSA's model as a modern outcome-based regulator and highlight opportunities that could encourage more plants to apply.

APPENDIX A - BACKGROUND

In 2017, the Ministry of Public and Business Service Delivery (formerly the Ministry of Government and Consumer Services) and Technical Standards and Safety Authority (TSSA) established the Operating Engineers (OE) Risk Task Group. The group was established in response to recommendations from a panel of OE industry stakeholders that recognized a growing industry and regulatory demand for a shift from a prescriptive to risk-based regulation, while maintaining a robust safety regime.

In 2018, the Risk Task Group developed a Path 2 framework for implementing Risk and Safety Management Plans based on the CSA Z767-17 Process Safety Management standard. The framework included a recommendation for TSSA to create detailed guidelines for implementing the four foundational pillars of the CSA Z767-17. TSSA subsequently developed the Path 2 Risk & Safety Management Plan (RSMP) Implementation Guide in June 2020.

In October 2020, the Minister of Public and Business Service Delivery approved Technical Standards and Safety Authority's proposed Alternate Rules for power plants; Ontario Regulation 219/01 (Operating Engineers). Subsequently TSSA held an initial industry session to introduce the Alternate Rules approach.

Under the Alternate Rules, registered plant owners and users can opt to receive authorization from TSSA to operate under an alternate safety path.

There are three safety paths available, and all three safety paths are monitored for safety compliance by TSSA.

- Path 0 - Plants are managed in accordance with the requirements under O. Reg 219/01.
- Path 1- Plants are regulated and rated based on a risk calculation measured by several factors in addition to the plant rating that governs risk in Path 0.
- Path 2 - Regulated plants implement Risk and Safety Management Plans customized for their specific sites that include additional risk management technologies and other processes developed by professional engineers and approved by TSSA.

In 2021, the Minister of Public and Business Service Delivery reached out to TSSA requesting an independent assessment of the effectiveness of Path 2 Alternate Rules processes by the Chief Safety and Risk Officer.

APPENDIX B – REVIEW METHODOLOGY

PURPOSE AND SCOPE

The Ministry of Public and Business Service Delivery requested the Chief Safety & Risk Officer (SRO) to review the Path 2 Alternate Rules and to assess the guidelines to industry, application processes, and regulatory oversight of plants. The goal was to ensure these elements supported flexible, risk-based regulation while maintaining safety outcomes. In scope for the review were the Path 2 applications processed by TSSA.

Before the SRO review, TSSA Internal Audit conducted a Readiness Review of Path 2 Alternative Rules processes offering management insights into potential gaps in procedures, internal controls, and documentation. To avoid duplicating the work of Internal Audit, the SRO's efforts were concentrated on:

- Interviewing key stakeholders and successful applicants to gather insights into expectations and the application process.
- Reviewing relevant processes and controls to understand stakeholders' insights.
- Observing regulatory oversight processes to verify safety outcomes.
- Utilizing Internal Audit's observations from the Readiness Review to enhance recommendations.

APPROACH

The SRO consulted internal stakeholders to craft a review approach that added value while avoiding any duplication of work already completed by Internal Audit.

In collaboration with TSSA representation, the SRO met with the former Risk Task Group committee members who shaped the Alternate Rules approach, as well as successful applicants, to gather their perspectives. Industry discussions focused on suggestions aligned with modern regulatory principles, emphasizing collaboration and transparency. Additional conversations were held with TSSA staff, and the SRO completed a review of relevant documentation.

Observations were validated by management and recommendations were developed with management input and collaboration.