



Application for Path 1 Alternate Rules Guideline Operating Engineers Program

Introduction

The Government of Ontario has amended the *Technical Standards and Safety Act, 2000*, to provide the Minister of Government and Consumer Services (The Minister) authority to approve alternate rules for the Operating Engineers regulation. The [Alternate Rules for O. Reg 219/01](#) are posted on the TSSA website.

The Minister approved alternate rules for the Operating Engineers regulation, effective July 1, 2020. These alternate rules exist in parallel to the current regulation. Part 1 of the alternate rules adopt a risk-based regulatory framework recommended by a panel of industry experts.

Under the alternate rules, a registered plant may consider one of two alternate regulatory paths:

- **Path 1 category-based approach**, where operator staffing requirements for industrial facilities are determined based on a rating system that considers the safety risk posed by plant operations.
- **Path 2 site-specific approach**, where regulated industrial facilities develop and implement their own site-specific Risk and Safety Management Plan (RSMP) in accordance with a safety management process standard.

The alternate rules provide businesses with flexibility and choice to either utilize the alternate rules or to continue adhering to requirements in the Operating Engineers regulation (“Path 0”).

What is Path 1?

In the regulation-based model (i.e., without alternate rules), TSSA has been using a plant’s power rating (in kilowatts) as a proxy measure for a plant’s size, complexity and associated safety risk. In essence, the Path 1 category-based approach (as set out in the [Alternate Rules for O. Reg 219/01](#)) is recognition from TSSA that this traditional method of determining safety risk needs to be modernized.

In light of all the technological advances in modern power plants and pressure equipment, and the improved safety risk management sophistication in the sector, it became evident that the traditional method of calculating plant’s safety risk solely by its power rating was no longer adequate.

Overall, the Path 1 approach seeks to measure the size, complexity and safety risk on more variables than the plant’s power rating, and considers factors such as:

- Technology type – boilers, refrigeration, steam prime movers and compression
- Plant configuration – design, operating environment and process parameters
- Plant occupancy and type of exposure

These above factors are used to calculate a risk rating for the plant. The Chief Officer at TSSA uses the risk rating to establish an adequate tier of trained Operating Engineers/Operators who can safely manage the plant. More details on the plant risk [rating calculations can be found in the Path 1 Summary of Plant Rating Calculations document.](#)



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Plant users may always choose to revert to compliance with the staffing level determined by O. Reg 219/01 at any time.

Path 1 Application Process

Step 1: Submit your application package

Each applicant must submit the following to start the Path 1 review process:

- Application for a Registration of a Plant (ARP) form** – This is a main application form required for all plant registrations. Please consult the [ARP form guideline document](#) for details on how to fill out the APR form.
- Application pre-payment fee** – Pre-payment is required at the time of application submission. Please consult the appropriate [fee schedule on the TSSA website](#) for more information.
- Plant Equipment List (PEL) form** – This form collects information about your plant's regulated inventory that will help TSSA estimate your plant's safety risk. Please consult the [PEL form guideline document](#) for details on how to fill out the PEL form.

Step 2: TSSA's review process

After you submit your documents, TSSA will conduct 3 levels of review.

1. **Initial review** – Soon after your application is submitted, TSSA's intake staff will assess your application package for completeness (i.e., are all the pre-requisite fields filled out?), including your account information (e.g., business name, phone number), and your pre-payment. Please note that if there is any missing information in your application, your application may be delayed.
2. **PEL verification** – Since your plant's equipment inventory information (collected via the PEL form) is an important determinant to your Path 1 application, TSSA's Operating Engineers inspectors will visit your site to verify that the information you have provided is accurate. Please note that failure to supply accurate information may cause delays in processing your application.
3. **Full review** – Once all of the information is collected and verified, TSSA's Chief Officer will make a determination on your staffing requirements. You will receive an acceptance letter including any terms or conditions (if applicable).

During the review process, TSSA may contact the applicant (or any of the applicant's agents) about the contents of the application package. The expected turnaround time for any given Path 1 application will vary depending on the complexity of the plant as well as the accuracy and completeness of the information provided to TSSA. Assuming that an application is relatively error-free, TSSA is committed to completing all Path 1 application reviews within 60 days of submission.

Step 3: User's acceptance

At the end of the review process, TSSA will send an official acceptance letter back to the applicant (i.e., the plant user). The acceptance letter will contain TSSA's risk rating



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determinations and the appropriate staffing levels determined by the Chief Officer. The user, upon receipt of the letter, has 3 options.

1. Accept TSSA's decisions regarding plant governance (based on Path 1 methodology) with any applicable restrictions, limitations and conditions
2. Reject TSSA's decision and continue being governed by O. Reg 219/01 without any alternate rules
3. Reapply with additional changes made to the plant equipment, controls and other risk-reducing factors

Step 4: Issuance of alternate rules registration (if the applicant accepts the decision)

A new plant registration is issued after TSSA receives the applicant's formal acceptance.

Fees for Path 1

The review of the initial Path 1 applications (i.e., the opt-in process) follows a fee-for-service model of billing. Like most fees that fall under this category, there is a pre-paid portion of the fees that covers up to the first few hours of review time (and any applicable travel time). Any additional time required by TSSA's staff to review the application will be billed hourly rates. Please consult the appropriate [fee schedule on the TSSA website](#) for more details on TSSA's labour rates.

If any of the information included in the original Path 1 application changes (e.g., account holder or contact information changes) or is no longer accurate, the plant user is required under the alternate rules to notify the Chief Officer at least 15 days prior to the change, or as soon as practicable after an unplanned change. Furthermore, if there is **any change** to the plant's equipment (which will require TSSA to reassess your plant's safety risk), a review of the alternate rules plant risk rating will be required. This means that the plant user being governed under the alternate rules must re-submit the application package to TSSA's Intake Department to re-start the review process.

Path 1 Methodology

The Path 1 approach measures your plant's safety risk rating based on the inherent risks associated with various regulated devices at your plant.

The Path 1 methodology involves the identification of hazard scenarios common to the plant components that would lead to catastrophic consequences and a probability of fatality resulting from the consequences.

A quantitative risk model is used to estimate the individual risk of fatality, defined as a product of the frequency of occurrence of hazard scenarios and the probability of fatality due to exposure to catastrophic consequences. This product value is adjusted using conditional probability factors (known in the model as modification factors) that would either increase or decrease the estimated risk.



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The modification factors are developed based on the technology type, plant configurations and plant occupancy and exposure type. The associated conditional probabilities are estimated based on expert advice and supported by scientific rationale. The estimated risk for a plant (in scientific units of 10^{-1} or lower) is converted into an absolute value using a simple logarithmic conversion. This value determines the final plant risk score and, depending on where that risk score fits in the pre-established acceptability thresholds set, adequate level of staffing (in terms of the level of the Chief Operating Engineer required).

TSSA worked with industry experts under a special task force known as the Operating Engineers Risk Task Group to develop the Path 1 methodology. The task group created the Path 1 framework (including the risk formula and the methodology) and presented its recommendation to TSSA's Chief Officer in the summer of 2018. The framework was eventually accepted and endorsed by TSSA.

Since the receipt of the Operating Engineers Risk Task Group's Path 1 methodology in 2018, TSSA has been testing the Path 1 methodology with sample plant inventory in Ontario to further refine the risk formula and various coefficients associated with different types of plant equipment. The full details on the final formula are published in the [Path 1 Summary of Plant Rating Calculations document](#).

Questions?

For more information on the application process, please review the [Operating Engineers Alternate Rules Frequently Asked Questions \(FAQs\)](#) on TSSA.org.

If your question is not answered in the FAQs, please send an email to alternate_rules@tssa.org.