

Ontario Regulation 419/05, Air Pollution - Local Air Quality, allows for the following three compliance approaches:

- Meet the air standard - in this case, the annual nickel standard is 0.04 µg/m³
- **Request and meet a site-specific standard – current process**
- Register under a technical standard (if available for the sector)

The Ministry of Environment, Conservation and Parks (MECP) recognizes that meeting some air standards can present technical challenges and require significant investments. The site-specific standard compliance approach allows a facility time to assess and, where possible, to implement continuous improvement solutions – focusing on actions that reduce ground level concentrations from air emissions as much as possible considering best available technologies.

The process/components of applying for a site-specific standard (SSS) are:

Component	Description
Combined Analysis of Monitoring and Modelling (CAMM)	<p>The CAMM consists of comparing measured nickel concentrations in the community to the concentrations predicted using dispersion modelling. In doing so, the facility can determine the “most refined” emission rates possible for use in the ESDM.</p> <p>As the Smelter would not be operating in its new configuration (with two new tall stacks) long enough to conduct a CAMM prior to the SSS application date, the MECP accepted Vale’s plan to use refined emission rates based on site-specific source testing instead of a CAMM.</p>
Emission Summary and Dispersion Modelling Report (ESDM)	<p>The ESDM consists of an emission inventory (an accounting for each source of emissions) and computer-based dispersion modelling to predict the maximum potential ground level concentration of all contaminants (not just nickel). The ESDM also includes detailed analyses of the nickel modelling to identify significant contributors, assess frequency of nickel standard exceedances, and provide dispersion modelling for the technology benchmarking.</p> <p>The ESDM demonstrates how the Smelter can meet the Ontario Regulation 419/05 24hr nickel URT, but cannot meet the annual nickel standard – thus the requirements for a SSS.</p>
Technology Benchmarking Report (TBR)	<p>The TBR is an assessment of best available technologies globally and their potential application at the Smelter, focusing on control options to minimize the magnitude and frequency of elevated concentrations of nickel in the community. The TBR considers only technical feasibility, and not costs. As directed by the ESDM, Vale’s TBR focused on control options for roads, general ventilation and baghouses. The recommendations of the TBR form the basis of the Action Plan.</p>
Economic Feasibility Assessment (EFA)	<p>The EFA is an optional study that incorporates economic feasibility into the selection of control options in the TBR. Due to time constraints, Vale did not undertake an EFA, however proposes to perform Cost Effectiveness Analyses for 2 control options as part of its Action Plan.</p>

Component	Description
Action Plan	<p>The Action Plan presents the facility's proposed control options for reducing nickel impact in the community, and the timelines for their implementation. These actions are based on the results of the TBR.</p>
Public Meeting / Community Engagement	<p>Because a Public Meeting was held for the original SSS application, there is no requirement to have a Public Meeting for the current application. Additionally, due to COVID restrictions, a Public Meeting was simply not feasible in 2020.</p> <p>Nonetheless, Vale values the community's feedback, and in consultation with the MECP, is delivering the information normally presented at a Public Meeting online. Vale can make printed copies of all materials available to the public upon request online.</p>
Application	<p>The application consists of the above components and is to be submitted by September 30, 2020. This provides the MECP with 15 months to review the application, for Vale to reconduct any portion as requested, and for the MECP to issue a new SSS by the time the current SSS expires at the end of 2021.</p>