

<h1>Project Navigator</h1>					Guideline				
TITLE STANDARDS FOR CONSTRUCTION TRAILERS					VALE # NAV-GP-0028			PAGE 1/15	
					DM # 734445			REV. 5	
Effective Date:	March 12/18	Revisit Date:	March 12/20	Prepared By:	T. Siemer	Approved By:	T. Hirschfeld		

1.0 PURPOSE

This guideline describes the standards for Construction Trailers. The purpose is to assist contractors, ERM personnel, and other Vale staff to implement these standards.

2.0 REFERENCE DOCUMENTATION

The following documents were used in the development of this document or are related to it. The most recent revision shall be used.

NAV-TP-0028	Project Trailer Audit / Checklist
NAV-GP-0042	Trailer Permit Guideline
NAV-TP-0027	Trailer Permit Template
NAV-WP-0042	Trailer Workflow
	Contractor Material List
SPEC-11014	Building Permits – City of Greater Sudbury
GUID-11016	Guideline for the use of Shipping and Storage Containers
O. Reg 854 s 159	Occupational Health and Safety Act and Regulations for Mines and Mining Plants section 159 O. Reg 854 s 159
Website Link	Ontario Electrical Safety Code – Bulletin 2-7-31, Rules 2-022 and 2-024

3.0 APPLICATION

This standard applies to all Construction Trailers on Vale property.

3.1 EXEMPTIONS

Trailer Permits are required for the Smelter Complex. For all other Vale sites, consult local management for trailer permit requirements.

4.0 STANDARDS

4.1 GENERAL

Smelter Complex only - When trailers are to be attached to Vale power systems they must be supplied with a suitably sized 100 ft long power line and male plug. See section 6.0 for Electrical Standards

The trailer must be located a minimum of 12 feet from adjacent buildings or other trailers.

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The trailer and surroundings are to be kept clean and free of hazards, and appropriate hygiene standards must be maintained.

Communications protocols must be complied with – see Smelter communications policy and applicable standards from Vale’s RF. Communications Administrator, Global Communications Group.

4.2 PERIOD OF USE

Trailers are to be used for short-term (maximum of 1 year) construction only and must be removed from the site upon completion of the work unless directed by the Vale Representative for the work.

4.3 PLANT SECURITY

When transporting a trailer onto a Vale site, a list of all items within the trailer must be provided to the Plant Security Person (PSP) using the “Vale Protection Services Contractor Material List” template. When removing the trailer from site, the contents will be reconciled to this list by Plant Security. Prior to removing the trailer from Vale property, the contractor must prearrange inspection of the trailer contents with the PSP at the trailer parking site. The PSP will compare the contents of the trailer with the inventory list provided when the trailer was brought onsite. If the list and contents match, the PSP will place a seal on the doors. The trailer can then be removed from site without delays at the plant gate.

4.4 INSTALLATION / CONSTRUCTION


On site, the trailer must be mounted level on sound structural supports and must be provided with structurally sound landings, stairs and hand railings. Wheels for transportation are to remain in place.

In all cases the trailers must be of suitable construction to accommodate the numbers of occupants and meet all applicable bylaws and codes.

Trailers must not obstruct entrances, doorways, fire lanes, access to fire hydrants, or emergency vehicle access.

4.5 FUEL FIRED HEATERS

All trailers equipped with fuel-fired furnaces must be pre-certified by the Fuels Safety branch of the Technical Standards & Safety Authority (TSSA). Site availability should be reviewed with the Vale Representative for the work to ensure hookup availability. Consult with the Vale Combustion Dept. for additional requirements.

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4.6 TRAILER PERMITS

A trailer permit system is in place on the Smelter Complex property in order to improve access to trailer sites and coordinate the provision of services to trailers.

The permit system includes a visible permit document attached to the exterior of the trailer. The document must indicate the essential information and contact phone numbers of contractor and associated Vale personnel. The document must also indicate the applicable use of the trailer i.e. Office, Lunchroom, INVAC, etc.

Smelter Complex - The Trailer Permit Form is to be completed by the contractor and the Vale Representative prior to the trailer being mobilized onsite.

Smelter Complex - each Trailer Permit issued will have a unique number, and a copy of the completed form will be retained by the Vale ERM Group.

Smelter Complex - Permits clearly indicating contact names and phone numbers are to be posted on trailer exterior and mounted in plastic pouch for protection.

4.7 OVERHEAD TRANSMISSION LINES, FLUES AND PROCESS PIPING

As per the Vale Power Department parking and / or storing equipment, aggregates or construction material under overhead transmission lines is not permitted. The hazard associated with this is that the equipment used to place or dump the material have to operate in the vicinity of an energized transmission line.

A Health and Safety Guideline from the Ministry of Labour (MOL) issued to Vale Power in January 1984 and revised in August 2004 states that the only way to eliminate the hazard of mobile equipment contacting an energized overhead transmission line is to prohibit the storage or placement of any material under an overhead transmission line.

Similar hazards are present under Process / Utility Piping and Flues. (Acid, Oxygen, Natural Gas, etc.)

- Do not park trailers or equipment under power lines, process piping or flues.
- Do not set up lay down areas or unloading sites under power lines, process piping or flues.

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4.7.1 Occupational Health and Safety Act and Regulations for Mines and Mining Plants
O. Reg 854 s 159 states the following:

159. (1) Electrical work shall not be performed on live equipment except where,

- (a) live line techniques are used;
- (b) approved live line equipment is used;
- (c) no hazard from explosive or flammable materials exists; and
- (d) all necessary precautions to work safely are taken.

(2) Except as provided for in subsection (1), no object shall be brought closer than the distance specified in column 2 of the following Table to an exposed, energized overhead electric supply line of the voltage specified in column 1;

Column 1	Column 2
Voltage of Powerline	Minimum Distance
300 to 150,000 volts	3 metres
150,000 to 250,000 volts	4.5 metres
Over 250,000 volts	6 metres


(3) Precautions to guard workers against injury by moving or energized parts shall be taken before maintenance, repair or adjustment work is performed on a machine that is energized.

(4) When located less than 1.5 metres measured in a horizontal plane or 2.5 metres measured in a vertical plane from a walkway or landing, any bare part of electrical equipment energized in excess of 150 volts DC or 50 volts AC shall be guarded.

(5) Machines that have movable or extendable booms must not be operated in close proximity to energized electrical supply lines unless,

- (a) they are operated in accordance with subsection (1); or
- (b) the operator of the machine has been authorized to perform such work and,
 - (i) there is a clearance between any part of the machine and the energized line that is more than the greater of,
 - (A) one half the maximum horizontal reach of the boom, or
 - (B) the distance determined under subsection (2),
 - (ii) the lines are disconnected and grounded,
 - (iii) the machine is a railroad crane operating on railroad tracks and the supply line is energized to less than 750 volts direct current, or

(iv) the supply lines are guarded against contact by any part of the machine or its load.

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(6) Subsections (2) to (5) apply only with respect to electrical lines installed on the surface and electrical equipment used on the surface. [O. Reg. 60/94, s. 7; 486/99, s. 6]

5.0 CONSTRUCTION TRAILERS – REQUIREMENTS

5.1 IDENTIFICATION

Exterior signs are to be posted to identify the Contractor occupying the trailer

Smelter Complex - Each trailer is to have an additional sign mounted on the left side of the trailer that faces the access roadway. The sign is to be mounted not less than six (6) feet or higher than eight (8) feet from the ground. Sign Specifications: The sign will be twelve inches square and constructed of blue coroplast with white lettering. The letters will be 2 to 3 inches in height. The sign will display the company name.

5.2 EMERGENCY EXITS:

- Illuminated Exit Sign
 - Exit signs must be kept clean / free of hazards.
 - Not required for single trailers or two trailers connected together.
 - 2 Exit signs are required when there is a greater occupancy of 60
- Must be kept free of obstructions or debris at all times

5.3 WASHROOM FACILITIES:

- Must be equipped with a lockable door knob
- Marked with appropriate signage (Men's/Women's/Unisex) washrooms

5.4 THE FOLLOWING ITEMS ARE REQUIRED IN THE TRAILER:


- Smoke Detector / Fire Alarm(s) / Fire Extinguisher(s)
 - Trailers must include operational smoke detectors and fire extinguishers. The extinguishers are to be checked on a monthly basis. Smoke detectors can be battery operated or permanently wired.
- Carbon Monoxide Alarm(s), for trailers with furnaces that can generate CO *
 - Required for the CCNR, IORP or Electrowinning Facilities, recommended at Smelter Complex.
- 1st Aid Kit with Inspection Tag and Sealed
- ESA sticker on Electrical Panel

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- Slippery When Wet Signs
- Shovel / Salt & Sand (for winter months only)
- Appropriate domestic and recycling waste receptacles
 - Minimum: small recycling container and domestic container per office
 - If there is a common lunch room it must be equipped with a large recycling container (using clear plastic bags) and a large domestic container (using green/black bags)

5.5 THE FOLLOWING ITEMS MUST BE POSTED IN A VISIBLE LOCATION INSIDE THE TRAILER:

- [Company Safety, Health & Environment Policy Statement](#)
- [Violence & Harassment Policy](#)
- [MOL Notice of Project & Form 1000](#)
- Project Contact Information (Vale & Contractor) (NAV-TP-0164)
- Project JHSC, Worker H&S Rep names and Contact Information
- Site Map *
 - Required for the CCNR, IORP or Electrowinning Facilities, recommended at Smelter Complex.
- Map showing route to Sudbury Hospital
- Emergency Contact number “decal” at each phone (Plant / Mine site First Aid or 705-682-6622)
- Plant or Mine Emergency & Fire Safety Manual / Plan
- Vale INVAC / OUTVAC Pictogram, where required
- Ministry of Labour Inspector Contact Information and Office Location
- Ministry of Labor Field Visit Narratives and Orders (applicable to the project and/or work site)
- 1st Aid Training Certificates
- No Smoking Signs
- [Occupational Health and Safety Act - Regulations for Mines and Mining Plants \(O.Reg. 854\)](#)

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- [Occupational Health and Safety Act - Regulations for Construction Projects \(O. Reg 213/91\)](#)
- MOL Poster "[Health & Safety at Work: Prevention Starts Here](#)"
- MOL Poster "[What You Should Know about the Ontario Employment Standards Act](#)"
- MOL Poster "[In Case of Injury](#)" (Form 28)
- Contract Specific Safety Plan (NAV-TP-0095)
 - Required for Surface ERM projects.
- Construction PHR (NAV-TP-0019)
- Contract Requirements Sections 1, 2, 3 and applicable Section 4(s)
- Building Permit from City of Sudbury (unless exempt)

5.6 THE FOLLOWING ITEMS MUST BE READILY AVAILABLE FOR ALL WORKERS:

- Copy of manufacturers operating manuals for Vehicles, Machinery, Tools and Equipment rated at greater than 10 horsepower – Reg. 213/91 sec. 93(4)
- Applicable Permits: Building / Demolition / Excavation / Plant Work Permits
- MSDS for products on Project Site
- MOL Young Workers Program pamphlets
- Training records for all workers: all generic training records, (see standard form: Contractor Training Requirements Summary NAV-TP-0161) including Trades Qualification and Apprenticeship Act (Trade licenses) for Surface Projects; and MTCU Modules (documentation of completed modules) for Mines Projects

5.7 WHERE APPLICABLE:

- INVAC Assembly Sign / INVAC Emergency Kit
 - When a trailer is to be used as an “Invac” Assembly Area, it must include the sealing package as defined by Vale Emergency Preparedness coordinator. A number of specific protocols need to be met to qualify a trailer as an INVAC Assembly Area. Review with your Vale Representative.
- Written Emergency Assembly Procedures
- Emergency Radio/Gaitronics System

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- Project Trailer Fire Safety Plan / Floor plans: (only required for “project trailer compounds” consisting of multiple trailers that are connected by walkways or other means)

5.8 BUILDING PERMITS:

As per CED SPEC-11014 - Building Permits – City of Greater Sudbury

- Building Permits from the Greater City of Sudbury are required if at least one of the following requirements are met:
 - Permanent human occupancy where personnel set up offices and work stations to perform construction management, project controls or other construction activities. (Construction Office / Split Lunchroom Configuration)
 - Trailers that require to be tied down and anchored to the ground.
- Building Permits are not required when Construction Trailers used for the workers to have their lunches and breaks (Lunchroom Trailers)
- Building Permits are not required when Construction Trailers are used for storage of construction materials (Tool Crib / Storage Trailer)

6.0 ELECTRICAL STANDARDS

6.1 ESA INSPECTION REQUIREMENTS

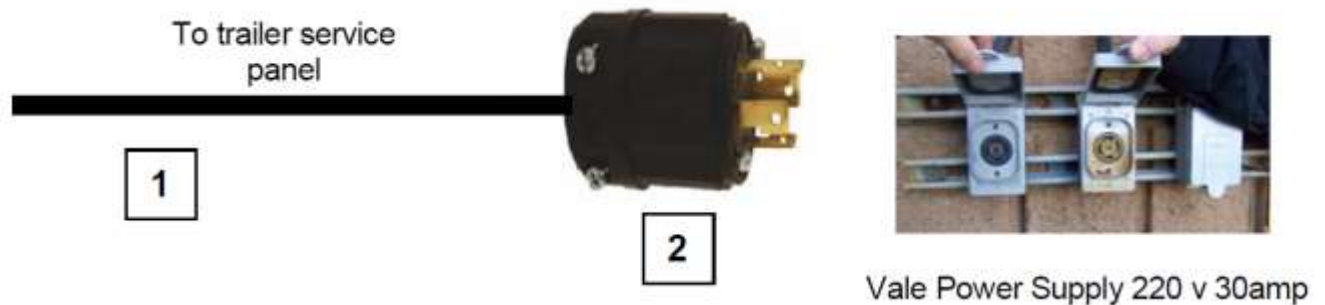
All trailer electrical systems must be inspected by the ESA (Electrical Safety Authority), and an appropriate ESA sticker applied to the service panel. This inspection must take place onsite, prior to powering the trailer.

6.2 TRAILER POWER CABLE ASSEMBLY STANDARD (SMELTER COMPLEX)

The standard power source available to construction trailers on site at the Vale Smelter is 220 volt at 30 amps. The trailer is to have its own extension cable and male plug in, serviced into the trailer distribution panel. This is the responsibility of the Contractor bringing the trailer to site.

- Cable: 100 ft of 4c #10 SOW or GGC minimum (Not teck or armored)
- Twist lock plug, L1430 male
- Protection: Any exposed cable, in a pathway or walkway is to have adequate protection.

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Once the contractor receives an authorized permit, the trailer can be moved onsite to the designated location. When the appropriate support system for the trailer and access stairs are installed, arrangements can be made with the area Electrical Safety Authority for an inspection. The electrical installation must be approved under standards council of Canada (see attached labels for accreditation), or accepted as a wiring installation by ESA. (White label from ESA complete with date and site)

The ESA Inspectors office can be reached at 705-523-1985 to arrange for an inspection. Allow at least two business days lead time.

A copy of the ESA inspection is to be given to the Vale Representative for the work, who, in turn will file it with the Trailer Permit.

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6.3 ONTARIO ELECTRICAL SAFETY CODE – BULLETIN 2-7-31, RULES 2-022 AND 2-024

Ontario Electrical Safety Code – **Bulletins**

Bulletin 2-7-31
Approval of electrical equipment
Rules 2-022 and 2-024

Issued August 2014
Supersedes Bulletin 2-7-30

Scope

- (1) Approval requirements
 - (a) Recognized certification marks
 - (b) Recognized field evaluation marks
 - (c) Recognized component marks
- (2) Approval of devices on class 2 circuits

(1) Approval requirements

The Ontario Electrical Safety Code and Ontario Regulation 438/07 recognize certification organizations accredited by the Standards Council of Canada to approve electrical equipment (Rule 2-024). Only equipment bearing one of the marks or labels shown in the following tables is approved.

To meet the requirements of the Ontario Electrical Safety Code, equipment must be approved to Canadian standards. This is signified by the "C" outside the Curtis Strauss, Entela, *ESA (Electrical Safety Authority -Field Evaluation ESAFE)*, ETL, FM Approvals, IAPMO, IWH, LC, MET, Nemko, OTL, QAI, QPS, UL, UPC and USPC marks. The "C and US" shown outside the CSA, ETL, LC, *MET*, NSF, TUV America, TUV Rheinland and UL marks, indicates the equipment with those marks is also compliant with United States standards.

Underwriters Laboratories mark without the "c" at the eight o'clock position, indicates the equipment is compliant with United States standards.




, CE mark, is manufacturer self-declaration mark and is not recognized in Canada.
















Note 1

For the most updated list of recognized certification and field evaluation marks and certification or field evaluation agency info, visit the Electrical Product Safety section of www.esasafe.com.

Certification Body	(a) Recognized certification marks Marking
Canadian Standards Association (CSA)	  
Curtis Strauss	

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Electrical Safety Authority – Field Evaluation (ESAFE)			
FM Approvals			
IAPMO			
Intertek Testing Services			
Labtest Certification (LC)			
Met Laboratories (MET)			
Nemko			
NSF International			
OMNI Environmental Services Inc			
Quality Auditing Institute			
QPS			

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SGS				
TUV America				
TUV Rheinland				
Underwriters' Laboratories of Canada (ULC)				
Underwriters' Laboratories Inc.				

(b) Recognized field evaluation marks
Marking

Inspection Body	Marking
Canadian Standards Association (CSA)	
Electrical Safety Authority (ESA)	 See Note 2
Intertek Testing Services	 See Note 2

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<p>Labtest Certification (LC)</p>	
<p>MET Laboratories</p>	
<p>Nemko</p>	
<p>Quality Auditing Institute</p>	
<p>QPS</p>	  <p>See Note 2</p>
<p>TUV America</p>	
<p>TUV Rheinland</p>	
<p>Underwriters Laboratories of Canada (ULC)</p>	
<p>Note 2 "PANEL ONLY" label identifies that the panel has been evaluated to the SPE-1000. It does not cover equipment that is added or connected to the panel.</p>	

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**(c) Recognized component marks
Marking**

Certification Body

Canadian Standards Association (CSA)	
Underwriters Laboratories Inc. (UL)	
<p>Note 3 Electrical components bearing these marks may have restrictions on their performance or may be incomplete in construction, and are intended to be used as part of a larger approved product or system. The recognized component marks are found on a wide range of products, including some switches, power supplies, printed wiring boards, some kinds of industrial control equipment and thousands of other products.</p>	

(2) Approval of devices on class 2 circuits

In accordance with Rule 2-022(3), electrical equipment does not require approval if it is connected to the load side of an approved class 2 power supply whose power output does not exceed 100 V•A and is operating at less than 42.4 V peak or dc with the exception of:

- (i) luminaires, decorative lighting strings, signs or displays with incandescent or halogen lamps;
- (ii) luminaires with Light Emitting Diode (LED) lamps;
- (iii) luminaires, decorative lighting strings, signs or displays incorporating a ballast with operating voltages greater than 42.4 V peak or 42.4 Vdc;
- (iv) electromedical equipment;
- (v) equipment for hazardous locations as defined under OESC Sections 18 and 20 of the Code; or
- (vi) equipment that incorporates heating elements.


Appendix B note intended for item (ii) does not require decorative light strings, signs or displays with LED lamps to be approved if connected to a class 2 power supply.

A certified Limited Energy Power Source marked LPS, whose power output does not exceed that of an approved class 2 power supply referred to above, shall be permitted to be used as an alternative to comply with Rule 2-022(3)(c)

Note

Limited Energy Power Supply (LPS) is certified as information technology equipment and has the output that is inherently protected or limited.



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7.0 APPENDICES

Appendix A: Revision and Transition Notes

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Revision notes describe: what was changed, why it was changed, and the plan to implement the change, including whether changes are retroactive)

Revision Control Information

Rev #	Date	Nature of Change	Page inserted, replaced, revised or cancelled	Approved by document owner
1	July 17/14		Document development based on previous 2012 PMP Memo	T. Hirschfeld
2	Nov 8/16	Minor	Section 7.1 updated to include domestic waste containers (w/ green/black bags) and recycling receptacles (w/ clear bags)	T. Hirschfeld
3	Mar 12/18	Minor	Section 2.0 updated reference documentation table to include SPEC-11014 and GUID-11016 Added Section 5.8 to give additional information regarding building permits from the City of Sudbury when required.	T. Hirschfeld
4	Mar 12/18	Minor	Add'l edits re: Building Permits and Storage Containers	T. Hirschfeld
5	May 6/18	Minor	Aligned terminology from PMO to ERM	