

CANADA LABOUR CODE
PART II
OCCUPATIONAL SAFETY AND HEALTH

Review under section 146 of the Canada Labour Code,
Part II, of a direction given by a safety officer

Applicant: MetroNet Communications Group Inc.
Represented by: I.S Campbell, Counsel

Respondent: None

Mis-en-cause: D. Schultz
Safety Officer
Human Resources Development Canada

Before: Douglas Malanka
Regional Safety Officer
Human Resources Development Canada

Background:

On April 14, 1999, a safety officer at Human Resources Development Canada issued a direction pursuant to subsection 145.(1) of the Canada Labour Code, Part II, (hereafter referred to the Code or Part II) to MetroNet Communications Group Inc. (MetroNet) regarding their DC Power Room¹ located at 200-200 Graham Street, Winnipeg, Manitoba. The direction, a copy of which is attached, specified that MetroNet was in contravention of paragraph 125(f) of the Code and subsection (ss) 16.8(1) of the Canada Occupational Safety and Health Regulations (hereto referred to as the COSHRs). The direction ordered MetroNet to provide eye wash facilities for the immediate use of employees, by May 5, 1999. On April 27, 1999, MetroNet requested a review of the direction and a review hearing was held on July 19, 1999, at Winnipeg.

Safety Officer:

Safety officer Dennis Schultz testified that he conducted a routine inspection of the MetroNet work place located at 200-200 Graham Street, Winnipeg, Manitoba, on January 27, 1999. While conducting his inspection he observed that their Battery Room contained approximately 40 GNB² Technologies (GNB) Absolyte IIP Batteries and that there was no eye wash station in the room. When he advised MetroNet that this was in contravention of Part XVI, "First Aid," of the

¹ In his direction, the safety officer referred to the DC Power Room as a Battery Room due to the presence of batteries in the room. Both terms were used interchangeably during the hearing.

² GNB Technologies is a Pacific Dunlop Company with global operations.

COSHRs, they assured him in writing that an eye wash facility would be installed. Safety officer Schultz subsequently pointed out to MetroNet that their eye wash facility must provide 15 minutes of eye irrigation which is normally supplied by a plumbed eye wash facility. By April 14, 1999, MetroNet still had not installed an eye wash facility in the Battery Room and safety Officer Schultz issued a written direction ordering MetroNet to comply by May 5, 1999.

Safety officer Schultz said that the eye wash facility at MetroNet must be capable of providing 1.5 liters of water per minute for a minimum of 15 minutes for several reasons. For example, GNB's "Installation and Operating Instructions Manual for Absolyte IIP Batteries" specifies in Section 2.0, "Safety Precautions" that Absolyte II P batteries contain sulfuric acid which can cause burns and other serious injuries. The Manual recommends that any area in contact with sulfuric acid be flushed immediately and thoroughly with water, and that medical attention be sought immediately.

Furthermore, the Material Safety Data Sheet (MSDS) produced and distributed by GNB for the Absolyte IIP Battery states in Section IV, "Routes And Methods Of Entry," that sulfuric acid vapors or mist in contact with the eyes can cause severe eye irritation, burns, cornea damage and possible blindness. Should this occur, Section IV of the MSDS specifies the following under "Health Hazard Information - Emergency and First Aid Procedures - Eyes,":

"Eyes: Sulfuric acid - flush with large amounts of water for at least 15 minutes, then consult physician. [My underline.]

Additionally, safety Officer Schultz submitted an article that appeared in the April/May, 1999, edition of "OSH Canada" entitled, "Getting an Eyeful." The article recommends that the eyes be rinsed immediately with potable water or special solution made for rinsing the eyes, for a minimum of 15 minutes following exposure to a biological or chemical substance. The article also references the American National Standard Institute (ANSI) for Emergency Eyewash and Equipment (Z358.1-1998) which requires that an eye wash facility be capable of providing 15 minutes of flush of 1.5 litres per minute for servicing both eyes.

Safety officer Schultz also disputed MetroNet's contention that ss 16.8(1) of the COSHRs does not apply in respect of their Battery Room because the hazard created by having water in a room containing electrical equipment makes it impractical to do so. He held that ss 16.8(2), which permits the use of portable equipment where it is not practicable to install a fixed eye wash facility, does not apply because a protective screen could be installed around the eye wash facility to prevent water from the eye wash facility coming into contact with the electrical equipment in the room. He agreed, however, that if Metronet insisted that the Battery Room not be plumbed, a portable eye wash station capable of delivering a flow rate of 1.5 litres per minute for 15 minutes of flush for servicing both eyes would meet the requirements of ss 16.8(1)

Applicant:

In response, the applicant provided witnesses and documents to refute safety officer Schultz's contention that the sulfuric acid in the Absolyte IIP batteries constitutes a hazard for eye injury for

MetroNet employees employed in their DC Power Room. I retain the following from the documents and witness statements.

Mr. D. Dzikowski, P. Eng, Director, Networks Standards, MetroNet, testified that the GNB Absolyte IIP Battery is unique in its design, construction and operation making it much safer than conventional wet lead-acid batteries. For example, the sulfuric acid in the Absolyte IIP Battery is absorbed on a glass matrix and is not free flowing. As a result, the risk of an acid leak from the Battery is extremely low. The Absolyte IIP Battery is hermetically sealed and consequently there is no need for employees to verify electrolyte levels or to add water. In the Absolyte IIP Battery, hydrogen gas produced by the chemical reaction in the cell is recombined within the Battery and is not released to the atmosphere. However, should a gas pressure exceptionally built-up in the Battery, because the room temperature was too high or the Battery was over charged, the pressure would be harmlessly released by a self-sealing pressure relief valve on top of the Battery before the pressure could build to a dangerous level. He stated that he was unaware of any leakage associated with a GNB Absolyte IIP Battery in operation during his approximate 10 years of experience.

Mr. Dzikowski further testified that the DC Power Room was purposely not plumbed when constructed to avoid the hazard of water contacting the electrical equipment in the room. He opined that water in contact with the electrically equipment could cause a fire or electrocution or could result in a disruption of communication service. He warned that an interruption of communication service could adversely affect services provided by hospitals, ambulances and the police, and that this could be more serious than the risk associated with sulfuric acid leaking from the Absolyte IIP Batteries. He added that, for the same reason, the fire sprinkling system in the DC Power Room is a two stage dry type system which precludes water from entering the pipes of the sprinkler system until absolutely needed to suppress a fire in the DC Power Room and to save the building.

He further held that the OSH Canada article referred to by safety Officer Schultz, does do not address the Absolyte IIP Batteries found in the communications industry that are specially designed to mitigate against hazards associated with normal lead-acid batteries. He also pointed out that the ANSI standard referenced in the article applies in the United States and not in Canada.

Mr. B. Manning, a sales person with GNB Technologies for 22 years, appeared on behalf of MetroNet. He reviewed various GNB publications on the design, construction, maintenance and use of the Absolyte IIP Battery according to his experience. He pointed out that the Absolyte IIP Battery case is made of polypropylene, a crack resistant material, and the case and electrodes are welded in a manner that precludes the possibility of leaks. He said that the Battery is further housed in a steel shell which further protects it from damage. Because the sulfuric acid in the Battery is held or suspended in a glass matrix acid it will not flow from the Battery. He added that, even if the Absolyte IIP Battery was cut in half on purpose, acid would not leak from it. He stated that, unlike normal wet lead-acid batteries, Absolyte IIP Batteries can be transported on public highways without placarding the vehicle, and they can be transported by air. He added that the Absolyte IIP Battery meets U.B.C. seismic zone 4 earth quake requirements.

Regarding the possibility of explosion, he pointed out that gases normally produced by wet lead-acid batteries during their operation and charging are recombined within the Absolyte IIP Battery and this virtually precludes the production of free hydrogen gases outside of the Battery. He confirmed that internal gas can be produced for the first 30 days of operation when a new Battery is installed, and exceptionally, if the Battery is over-heated or subjected to a rapid charge or discharge of electricity. He held, however, that the scientific papers confirm that any internal gas exceptionally produced is quietly and safely vented before the internal pressure of the gas becomes unsafe and that any venting from the Battery would be in the form of puff of acid mist. He said that the Battery electrodes are covered with a plastic guard when the batteries are in operation and this avoids the possibility of an accidental rapid discharge.

He was uncertain as to why GNB's Installation and Operating Instruction Manual and Material Safety Data Sheet, contain warnings and safety precautions relative to the exposure to sulfuric acid. He speculated, however, that the company is simply being prudent since the Absolyte IIP Batteries does, in fact, contain sulfuric acid.

Mr. B. Friesen, Manager, Installation and Maintenance, MetroNet, Winnipeg Facility, testified that a portable eye wash container was installed in the DC Power Room following the safety officer's direction. He said that the portable eye wash station was selected because DC Power Rooms are not normally plumbed and because of the safety concerns related to having plumbed water in a Power Room. He noted other companies in the communications industry use portable eye wash containers in their DC Power Rooms and was not aware that any of them had been required by a safety officer to install a plumbed permanent system capable of supplying a 15 minutes of flush. He added that a plumbed bathroom where workers could rinse their eyes was located approximately 25 feet from the DC Power Room and this was another reason for selecting a portable eye wash.

He further testified that access to their DC Power Room is now limited to authorized personnel and that employees are required to wear safety goggles when they maintain the Absolyte IIP Batteries. He said that during his approximately 25 years of experience in the communications industry he has never heard of an Absolyte IIP Battery leaking during operation.

Summations:

Mr. Campbell argued that ss 16.8 does not apply because the evidence presented establishes that there is no hazard for eye injury relative to the Absolyte IIP Battery or its maintenance.

He further argued that the GNB warning in section 2 of their "Installation and Operating Instructions Manual for Absolyte IIP batteries," that reads:

"Batteries contain sulfuric acid which can cause burns and other serious injury. In the event of contact with sulfuric acid, flush immediately and thoroughly with water. Secure medical attention immediately."

must be read in the context of section 1.0 of the manual which reads:

“1.0 General Information

In normal use, the ABSOLYTE^R battery will not generate or release hydrogen gas, will not release acid mist, and will not leak acid. This is because ABSOLYTE batteries are designed differently than conventional lead acid batteries, in order to operate with low maintenance. Thus they are inherently safer than conventional lead acid batteries. ... ”

Similarly, he held that GNB is just being prudent when it recommends in its MSDS that the eyes should be flushed immediately with cool water for 15 minutes after contact with sulfuric acid because the batteries, in fact, contain sulfuric acid. He argued that, in both cases, the facts in the case establish that there is little chance for employee contact with the sulfuric acid in the Absolyte IIP Battery.

Mr. Campbell then argued that, should I find that a hazard for eye injury from a hazardous substance existed, nothing in ss 16.8(1) specifies that the eye wash facility must be a plumbed eye wash station nor does it specify flow rates or flow times for the eye wash station. He held that, if Parliament wanted to specify a plumbed eye wash they would have done so. He further argued that MetroNet's use of a portable eye wash is consistent with the approach followed by similar communications companies.

Finally he argued that should I find that a hazard for eye injury from a hazardous substance existed, then ss 16.8(2) applies. He held that the hazard of fire, electrocution or failure of the communications system created by introducing water into the DC Power Room makes it impracticable to install a plumbed system in such rooms.

Decision:

The issue that I must decide is whether or not section 16.8 of the COSHRs applies in respect of Absolyte IIP Batteries that are housed and operated by MetroNet in their DC Power Room located at 200-200 Graham Ave., Winnipeg, Manitoba. Or more specifically, I must decide whether the sulfuric acid contained in the Absolyte IIP Batteries constitutes a hazard of eye injury for MetroNet employees requiring the employer to install an eye wash facility for their immediate use.

Ss 16.8(1) reads:

16.8(1) Subject to subsection (2), where a hazard for skin or eye injury from a hazardous substance exists in the work place, shower facilities to wash the skin and eye wash facilities to irrigate the eyes shall be provided for immediate use by employees. [My underline.]

Should I decide that the sulfuric acid in the Absolyte IIP Batteries does constitute a hazard for eye injury, then I must then decide if ss 16.8(2) applies, as contended by Mr. Campbell. Ss 16.8(2) permits an employer to install portable eye wash equipment where it is not practicable to provide a eye wash facility. Ss 16.8(2) reads:

16.8(2) Where it is not practicable to comply with subsection (1), portable equipment that may be used in place of the facilities referred to in subsection (1) shall be provided. [My underline.]

For interpreting and applying section 16.8 of the COSHRs in respect of MetroNet's Absolyte IIP Batteries, I note that there is no definition for the term, "hazard" in Part II or the COSHRs. However, according to Webster's³ Dictionary "hazard" is defined to mean:

"-a risk or possibility of loss or injury...someone or something that creates or suggest a hazard, the chance of loss, a source of danger..." [My underline.]

In my view, this definition indicates that the "hazard" involves both a source of danger, in the ordinary sense of meaning of the word danger, and a risk or chance of loss or injury. This view is essentially confirmed by the wording in ss 16.8(1) which states:

"...where a hazard for...eye injury from a hazardous substance exists..." [My underline.]

Therefore to decide that section 16.8 of the COSHRs applies in respect of the Absolyte IIP Batteries at MetroNet I must not only decide that there is a source of danger in general, which is the sulfuric acid in the Batteries in this case, but I must decide that there is a risk or possibility of employee exposure to the sulfuric acid.

In the case at hand, the employer presented evidence to show that the design, construction, and operation of the Absolyte IIP Battery by MetroNet mitigates any hazard or risk of exposure to the sulfuric acid to the point where section 16.8 does not apply. In this regard, I heard that the Absolyte IIP Battery is a sealed unit fabricated using strong materials and sealing processes that ensure little possibility of leakage. According to GNB documents, this enables the Absolyte IIP Battery to meet U.B.C. Seismic Zone IV requirements and to be used in military applications where durability and resistance to mechanical shock and vibration is essential. The sulfuric acid in the Battery is contained in a glass matrix and not able to flow freely from the cell even if the vent seal is removed or, as suggested by the salesperson, even if the Battery is cut in half with a saw. Because the Battery is a sealed unit there is no requirement or opportunity for employees to store or handle sulfuric acid while maintaining the batteries as with conventional wet lead-acid batteries. The design, construction and fabrication of the Battery precludes, under normal conditions, the formation, buildup or release of explosive hydrogen gas while the Batteries are in operation. Should such gases be exceptionally produced, due to an over-heating or over-charging situation, the gases are quietly and safely vented via a self sealing vent cap before a dangerous built up of pressure can occur in the Battery. However a document from MetroNet held that the chance of over heating or over charging was unlikely because the DC Power Room is regularly monitored and inspected.

I also heard evidence from MetroNet that employee access to the DC Power Room is now limited to authorized personnel, and that employees wear protective eye wear when they maintain the batteries. Such measures are important to reducing the risk of an eye injury should

³ Merriam Webster's Collegiate Dictionary, Tenth Edition

an exceptional leakage of sulfuric acid occur from a Absolyte IIP Battery and should not be abandoned. Both Mr. Dzikowski and Friesen told me that the monthly inspection of Absolyte IIP Batteries takes approximately one half hour to carry out and involves visually inspecting the Batteries for corroded electrodes or leakage and conducting electrical measurement to monitor their status. Mr. Friesen told me that no other work is performed on the Batteries.

With regard to the warning contained in the Installation and Operating Instruction Manual, and the MSDS produced by GNB, I am inclined to agree with Messrs. Manning and Campbell that these warnings are included in the documents to make it clear to the reader that the Batteries do contain sulfuric acid. The warnings recommend, without regard to the risk factors associated with an accidental exposure, measures to avoid contact with the sulfuric acid and measures to deal with an accidental exposure, such as flushing any area that comes in contact with sulfuric acid with cool water thoroughly for 15 minutes, should an exposure occur. I would not expect them to do otherwise.

In consideration of the unique design and construction of the Absolyte IIP Battery, and the procedures used at MetroNet to monitor and maintain the Absolyte IIP Batteries in their DC Power Room at 200-200 Graham Street, Winnipeg, Manitoba, I cannot agree with safety officer Schultz that a hazard for eye injury from the sulfuric acid in the Absolyte IIP Batteries exists there relative to ss 16.8(1) of the COSHRs. As a result, **I HEREBY RESCIND** the direction safety officer Schultz issued on April 14, 1999, pursuant to paragraph 145.(1) of the Code, to MetroNet Communications Group Inc., at 200-200 Graham Ave., Winnipeg Square Walkway, Winnipeg, Manitoba.

Decision rendered on November 10, 1999.

Douglas Malanka
Regional Safety Officer

IN THE MATTER OF THE CANADA LABOUR Code
PART II - OCCUPATIONAL SAFETY AND HEALTH

DIRECTION TO EMPLOYER UNDER SUBSECTION 145(1)

On 27 January, 1999, the undersigned safety officer conducted an inspection in the work place operated by METRONET COMMUNICATIONS GROUP INC., being an employer subject to the Canada Labour Code, Part II, at 200-200 Graham Ave., Winnipeg Square Walkway, WINNIPEG, MANITOBA, the said work place being sometimes known as Metronet, 200-200 Graham Ave.

The said safety officer is of the opinion that the following provision of the Canada Labour Code, Part II, is being contravened:

Canada Labour Code 125(f), requirements for first aid and COSHR 16.8(1).

Eye wash facilities shall be provided for immediate use. e.g. Battery room.

Therefore, you are HEREBY DIRECTED, pursuant to subsection 145(1) of the Canada Labour Code, Part II, to terminate the contravention no later than May 5, 1999.

Issued at Winnipeg, Manitoba, this 14th day of April 1999.

Dennis Schultz
Safety Officer
2966

To: METRONET COMMUNICATIONS GROUP INC.
200-200 Graham Ave.
Winnipeg Square Walkway
WINNIPEG, MANITOBA
R3C 4L5

SUMMARY OF REGIONAL SAFETY OFFICER DECISION

Applicant: MetroNet Communications Group Inc.

Respondent: None

KEY WORDS

Communications industry, Battery Room, GNB Absolyte IIP Battery, hermetically sealed, self closing vent valve, Valve Regulated Lead Acid Absorption Glass Mat (VRLA-AGM) Battery, sulfuric acid, hazard, eye injury, eye wash facility, Material Safety Data Sheet (MSDS).

PROVISIONS

Code: 125.(f) 145.(1), 146

Reg: 16.8(1) and (2)

SUMMARY

Following a routine inspection of a workplace, a safety officer issued a direction to a communications company pursuant to subsection 145.(1) of the Canada Labour Code, Part II. The direction ordered the employer to comply with section 16.8(1), First Aid, of the Canada Occupational Safety and Health Regulations and install an eye wash facility in their Battery Room for the immediate use of employees.

The Regional Safety Officer who reviewed the direction decided that section 16.8 of the COSHRs do not apply in respect of the Absolyte IIP Batteries located in the Battery Room. He held that due to the unique design, construction of the Absolyte IIP Battery and the monitoring and maintenance procedures associated with the Batteries, a risk or hazard of the acid in the Batteries causing an eye injury to an employee did not exist in respect of the Batteries used at the employer's work place. The Regional Safety Officer rescinded the direction.