

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: Cape Breton Development Corporation (Prince Mine)  
Point Aconi, Nova Scotia  
Represented by: John A. McKinlay, Legal Counsel

Other Parties: None

Mis-en-cause: Bill Gallant  
Safety Officer  
Human Resources Development Canada

Before: Douglas Malanka  
Regional Safety Officer  
Human Resources Development Canada

Background:

On June 3, 1999, a safety officer with Human Resources Development Canada conducted an inspection of Prince Mine at Point Aconi Road, Point Aconi, Nova Scotia. In the course of his investigation the safety officer found an accumulation of coal dust or muck located on the open side of the conveyor belt line, and on the inside of the conveyor belt up to the rollers. He orally directed the Company to remove the accumulation before the conveyor belt was restarted and confirmed his oral direction with a written direction later that day. The written direction, among other things, ordered the employer to terminate the contraventions to paragraph 125.(u) of the Canada Labour Code (hereto referred to as the Code or Part II) and to subsection 133.(1)<sup>1</sup> of the Coal Mines (CBDC) Occupational Safety and Health Regulations (hereto referred to as the Regulations), by June 3, 1999. A copy of the direction is attached.

On June 15, 1999, the Company requested that the direction be reviewed by a Regional Safety Officer. They later clarified that they were only requesting a review of item 2 of the direction respecting the accumulation of coal dust. A review hearing was held on November 29, 1999, at Sydney, Nova Scotia.

Safety Officer:

Safety officer Bill Gallant submitted a written report to the Office of the Regional Safety Officer concerning his direction, and testified at the hearing. I retain the following facts from his report and testimony.

---

<sup>1</sup> The direction incorrectly identified section 137.1 of the CBDC OSH Regs instead of subsection 133(1).

First, safety officer Gallant confirmed that item 2 of his direction should have referred to subsection 133.(1) of the Regulations and not section 137.1. Section 137.1 deals with the requirement for stone dust or water barriers in intake airways leading to a working face and not the accumulation of coal dust.

He then testified that, during his inspection of Prince Mine, he found an accumulation of coal dust or muck to the open side of the conveyor belt line. On further examination he noted that the accumulation was greater on the inside of the conveyor belt and that it was in contact with 8 of the bottom rollers of the conveyor belt and, in some cases, to the tops of the rollers. He estimated the height of the accumulation on the inside of the conveyor belt to be approximately 8-12 inches by comparing the height of the accumulation with the height of the rollers, and by stepping his foot into the coal accumulation.

With regard to subsection 133.(1), safety officer Gallant explained that the term “coal dust” is not defined in the Code or Regulations, but that he interprets the term to mean fine particles of coal dust that would be equivalent in size to fine sand on a beach. He held that it is the particle size that determines whether the coal particles constitute coal dust, and not whether they are wet or dry.

He testified that coal in the accumulation he observed ranged from large chunks to dust-size particles, and that a significant portion of the material was coal dust. He indicated that the coal dust could have originated from the bottom of the conveyor belt or could have been transported there by the floor water moving along the level or by the ventilation air. He conceded that the accumulation could have also included inert stone dust, but since he had not analyzed its concentration, he could not say how much inert stone dust was present.

The safety officer acknowledged that some areas of the mine floor in the vicinity of the coal accumulation were covered with water, but could not agree that water was present everywhere, or that the coal accumulation was thoroughly wet. Rather, he described the coal accumulation as being moist, and agreed that the coal material was sufficiently moist that it would have clumped in the hand if grabbed and squeezed. Notwithstanding this, he held that coal dust can dry quickly and the coal dust in the accumulation could become airborne in the event of any significant change in the velocity of air in the mine. He confirmed that he had neither measured nor ordered the employer to measure the moisture content of the coal, or the percentage of inert dust in the coal accumulation.

Safety officer Gallant held there were numerous sources of ignition in the area and therefore the accumulation of coal also constituted a fire hazard. These included: mechanical friction and heat from the rollers; heat from the conveyor belt rubbing against the stands; heat from fiber tears off the belt and wind around the rollers; and various electrical and mechanical equipment operating in the area.

For interpreting and applying subsection 133.(1) relative to the term “accumulation,” safety officer Gallant opined that a contravention exists whenever any accumulation of coal dust is observed by a safety officer regardless of how and when it got there. He conceded, however, that the decision to issue a direction could depend on whether procedures are in place and being followed in the mine that ensure that coal dust is removed before an accumulation becomes significant. He testified that the accumulation of coal dust that he observed on the day of his investigation was significant and should not be there in a normal operation.

Applicant:

While neither Mr. McKinlay nor Cape Breton Development Corporation (DEVCO) disputed safety officer Gallant's contention that there was an accumulation of coal or muck beneath the conveyor belt on the day of his inspection, and that it was up to the rollers of the conveyor belt, Mr. McKinlay provided witnesses and documents on behalf of DEVCO to refute safety officer Gallant's contention that there was a contravention of subsection 133.(1) of the Regulations. I retain the following from the documents and witness statements.

Mr. Tony Barrett, Area Coordinator and Acting Shift Manager on the day of safety officer Gallant's inspection testified that the conveyor belt was stopped at the time of the safety officer's inspection. However, he could not confirm whether the conveyor belt had been operating during the shift prior to inspection or how long the accumulation had been there.

Mr. Barrett confirmed that a mechanical helper, or "mucker", had been assigned to the portion of the conveyor belt in question and that the mucker had descended into the mine at 7:00 a.m., an hour and a half prior to the safety officer's descent. He testified that muckers usually decide for themselves how to proceed with mucking a belt unless they are directed by an overman<sup>2</sup>. He said that, typically, coal accumulations around the rollers of the conveyor belt are cleared first, and then the rest of the conveyor belt line is cleared. He added that if an accumulation is not cleared during a shift, it is removed immediately during the next shift. He insisted that the length of the conveyor belt assigned to the mucker the day of safety officer Gallant's inspection was not excessive and that the mucker would have removed the accumulation from around the rollers before the end of the shift. However, I noted that Mr. Barrett was unable to explain why the mucker had not removed the accumulation that morning prior to safety officer Gallant's arrival, or why the mucker was not in the process of removing the accumulation when the safety officer arrived at the conveyor belt.

Mr. Barrett insisted that the accumulation observed by safety officer Gallant was not of coal dust but of muck. He defined muck as being a wet to soupy mix of coal and stone dust from the floor, and large pieces of coal from the conveyor belt. He testified that the coal mining industry considers coal dust to consist only of dry fine coal particles capable of becoming airborne. He testified that the water flows continuously on the floor of 9 East mine and that the coal accumulation observed by safety officer Gallant was thoroughly wetted.

Mr. Barrett agreed that the accumulation of muck around the conveyor belt was significant. He also agreed that, over a period of time, there could be a problem with the rollers turning over the coal if the accumulation was not removed at some point. However, he held that there was no immediate hazard of fire or explosion because the belt was stopped, the accumulation around the conveyor belt rollers was wet, and because the mucker would have removed the accumulation during his shift. He added that, if the mucker had not cleared the accumulation that shift, it would have been noted by the mine examiner who would ensure it was cleared during the next shift.

Mr. Tom MacNeil, Statutory Mine Manager at the mine held that there are times when overflow from the belt will occur because the shear is capable of cupping up to 40 feet of coal per minute. He further acknowledged that pieces of coal that fall from the belt could sit there for a week, but

---

<sup>2</sup> "Overman" is defined in the CM(CBDC)OSH Regulations as "an employee who holds a third class certificate as a mine official and who is appointed as an overman."

regular inspections are carried out by mine examiners and overmen every 24 hours and they would ensure that accumulations were removed.

He held that the accumulation of coal noted by the safety officer consisted of muck and not coal dust. He reiterated that there is a general understanding in the coal mining industry that coal dusts consists of fine particles of coal that are dry and either airborne or capable of becoming airborne as dust. He held that muck can consist of larger pieces of coal and of coal dust that is wet and incapable of becoming airborne. He insisted that the coal accumulation observed by safety officer Gallant was wet because the shears, crushers and transportation belts are equipped with dust suppression systems that spray the coal with copious amounts of water. He pointed out that the shear at 9 East Wall delivered 229 litres of water per minute and that a river of water flowed over the floor constantly. In addition, he stated that the coal body in 9 East was over a body of limestone which accumulated the continuous flow of water on the floor.

He further held that there is an inherent amount of water in the coal itself and, in this regard, produced a report of laboratory analysis of coal stored at the surface of the mine. The Report confirmed that over a period of 5 counting periods from April to August, 1999, the average moisture of the coal mined from Prince Mine was 9.1 percent (weighted average of coal transported from Prince Mine.)

He also held that coal dust from the air is not permitted to accumulate because the dust that collects on the walls and floor of the mine is regularly covered with inert dust. He proffered a report of laboratory analysis that confirmed that the average percent of inert dust in the dust samples taken from the walls and floor of the mine was 96 percent. He held that the dust suppression measures practiced in the mine ensure that dust does not accumulate, and that, if safety officer Gallant was concerned with the amount of muck along the conveyor belt, his concern was one of housekeeping and not the accumulation of coal dust. In addition, he reiterated that the mine is inspected every shift and that, if the accumulation had not been removed during that shift, it would have been addressed during the next shift.

Summation:

Mr. McKinlay requested that I vary the direction to delete item 2 of the direction which reads:

*“2. Paragraph 125 (u) of the Canada Labour Code, Part II, section 137.1 of the Coal Mines (CBDC) Occupational Safety and Health Regulations*

*There is an accumulation of coal dust around 8 of the bottom rollers located in 9 East Bottom.”*

[My underline. The safety officer agreed at the start of the review hearing that the correct citation was section 133.(1) of the Coal Mines (CBDC) Occupational Safety and Health Regulations and not 137.1, as indicated in the direction.]

He argued that subsection 133.(1) of the Regulations applies only to accumulations of dry coal dust and not to fine particles of coal that are wet or treated with inert dust. He reminded me of Mr. MacNeil’s testimony to the effect that water is continuously sprayed at the shear and on the conveyor belts, and of Mr. Barrett’s testimony that there was constant flow of water in 9 East and the coal referred to in item 2 of the direction was wet. He also reminded me of

Mr. MacNeil's testimony that inert dust is applied to dry coal dust on the floor, ribs and ceiling where dry coal dust may accumulate, and that samples of the treated dust taken from the area indicated a higher concentration of inert dust than is prescribed in the legislation.

He also argued that the material on the floor did not constitute an accumulation referred to in subsection 133.(1) because mucking coal is a cyclic activity in a mine. He noted that, according to Mr. Barrett's testimony, a mucker had been assigned to the conveyor belt at the time of the safety officer's investigation, and that the mucker had ample time to muck the coal and would have removed the material from the floor during his shift that day. Thus he contended that DEVCO was acting with due diligence since the material found below the belt would have been removed in accordance with normal mine operating procedures.

Finally, he argued that, if safety officer Gallant regarded the accumulation of coal on the floor and around the belts as a fire hazard, he could have cited DEVCO for poor housekeeping pursuant to section 124 of the Code. He insisted, however, DEVCO had exercised due diligence<sup>3</sup> relative to avoiding a fire hazard because the coal accumulation was wetted. He further argued that if safety officer Gallant regarded the situation as a danger under the Code, he could have issued a direction pursuant to subsection 145.(2) of the Code.

#### Applicable Law:

Paragraph 125 (u) of the Code reads:

*125. Without restricting the generality of section 124, every employer shall, in respect of every work place controlled by the employer,  
u) adopt and implement prescribed safety codes and safety standards;*

Subsection 133.(1) of the Regulations reads:

*133. (1) Every area underground shall be kept free from accumulations of coal dust.  
(2) Dry areas underground in which coal dust is produced shall be systematically wetted down with water.  
(3) To reduce coal dust underground,  
(a) where dry coal is cut by a coal-cutting machine, a jet of water shall be directed over the picks of the machine; and  
(b) mined coal shall be kept wet during handling.*

#### Decision:

The issue I must decide is whether the coal on the floor of the mine and around and beneath the bottom rollers of the conveyor belt in 9 East Bottom constituted a contravention of subsection 133.(1) of the Regulations or of some other provision of the Code or Regulations.

---

<sup>3</sup> Section 148 reads:

*6) On a prosecution of a person for a contravention of subsection (4) or  
(e) section 124, 125.1, 142 or 143,  
it is a defence for the person to prove that the person exercised due care and diligence to avoid the contravention. [My underline.]*

To decide if there was a contravention of subsection 133.(1), I must interpret and apply the term “coal dust” that is contained therein. Since the term is not defined in the Code or the Regulations, I must rely on the definition currently found in the dictionary. According to Webster’s Collegiate Dictionary, dust is defined as follows:

*“dust n. 1: fine particles of matter (as of earth), 2: the particles into which something disintegrates, 3: a: something worthless b: the surface of the ground 4 a: the earth esp. as a place of burial b: the surface of the ground 5 a: a cloud of dust b: CONFUSION, DISTURBANCE 6 a: single particle (as of earth) 7 Brit : refuse ready for collection.”*  
[My underline.]

This definition agrees with the employer and the safety officer who testified that coal dust is made up of fine coal particles, and tends to agree with the employer’s testimony that the coal dust particles must be capable of becoming airborne, . e.g., “5 a: a cloud of dust”.

The notion that the particles must be fine and be capable of becoming airborne is confirmed in the definition of dust found in “The Random House Dictionary of the English Language<sup>4</sup>: It reads:

*“ dust (n.) 1. Earth or other matter in fine, dry particles. 2. A cloud of finely powdered earth or other matter in the air. 3. Any finely powdered substance, as sawdust. ...”*  
[My underline.]

I also referred to the French version of the subsection 133.(1) which is equally valid legislation. The French version of subsection 133.(1) reads:

*<<133.(1) Les secteurs souterrains doivent être libres de toute accumulation de poussières de charbon.>> [My underline.]*

According to the Le Petit Robert, 1993, dictionary, the word “poussières” means:

*<<poussière 1 : Terre desséchée réduite en particules très fines, très légères; mélange pulvérulent de corpuscules assez ténus pour pouvoir se maintenir en suspension dans l’air. poudre. Poussière fine. La poussière des routes, des chemins de fer. Faire de la poussière. <<On soulève en marchant, une épaisse poussière blanchâtre qui prend à la gorge.>> Nuage, tourbillon de poussière . Ces particules qui se déposent. Couche de poussière...2 : Matière réduite en fines particules ... poussière de charbon...>>*  
[According to Harrap’s Shorter French - English Dictionary, the English translation for the word “desséchée” is “dry.”]

In my view, these definitions establish that the term “coal dust” in subsection 133.(1), must be interpreted to mean fine, dry particles of coal that are either airborne or capable of becoming airborne. Further indication of this interpretation, I suggest, is found in subsections 133.(2) and (3) which convey the notion that dust is transformed by water into mud or sludge when wetted. According to subsections 133.(2) and (3):

---

<sup>4</sup> The Random House Dictionary of the English Language, 2<sup>nd</sup> Edition, 1987.

*“subsection 133.(2) Dry areas underground in which coal dust is produced shall be systematically wetted down with water.*

*subsection 133.(3) To reduce coal dust underground,*

*(a) where dry coal is cut by a coal cutting machine, a jet of water shall be directed over the picks of the machine; and*

*(b) mined coal shall be kept wet during handling.”*

[My underline.]

As a result, I must decide that, for the purpose of subsection 133(1) of the Regulations, fine particles of coal are not considered as “coal dust” when wetted and no longer airborne or capable of becoming airborne.

With regard to the facts in this case, safety officer Gallant disagreed with the employers testimony that there was a continuous flow of water at the location of the coal accumulation and that the accumulation of coal was fully wetted. He also testified that he did not regard the moisture content of fine particles of coal as being significant relative to subsection 133.(1) because coal particles can dry quickly and become capable of becoming airborne. However he did agree that the accumulated material was sufficiently moist at the time of his investigation that, if scooped into the hand and squeezed, it was sufficiently moist to remain clumped.

Since, in my view, subsection 133.(1) only applies in respect of fine coal particles that are dry and either airborne or capable of becoming airborne, and based on the fact that the coal accumulation was sufficiently moist that it would remain clumped if compressed in the hand, and the fact that safety officer Gallant had not conducted or caused the employer to conduct any test to show that accumulation of coal was dry, I must conclude that, at the time of his investigation, the coal particles in the accumulation did not constitute coal dust relative to subsection 133.(1) of the Regulations.

This stated, I am mindful of safety officer Gallant’s unchallenged statement at the hearing that wetted coal dust can dry quickly and the amount of water wetting the coal dust should not be considered when applying subsection 133.(1) of the Regulations. However, the Regulations do not appear to specify how wet coal dust accumulations are to be handled or how much water must be present in coal dust to ensure that wet coal dust in a mine cannot become airborne and implicated in a coal dust explosion<sup>5</sup>. Given that the employer and safety officer Gallant agreed that the

---

<sup>5</sup> Comments that I found on page 78 & 79 of the Coal Industry National Consultative Council Safety and Health Committee’s “Final Report of the Working Party on Coal-dust Explosions, National Coal Board, London, July 1967” state that:

*ii) There is not a great risk of thoroughly wetted coal dust propagating an explosion in the circumstances in which explosions are most likely to occur in this country. The ignition of a large body of explosive mixture of gas in certain circumstances, e.g. in a long coal heading, might produce sufficient violence to raise thoroughly wet coal into the air either directly or after the ignition of dry coal dust, but so far as is known all conditions conducive to such explosion of coal dust “mud” have not in the past arisen together in practice.*

*iii) A more serious risk in British mining conditions arises from the possible occurrence of patches of incompletely wetted or even dry dust of high combustible content, or of a superficial and readily dispersible covering of such coal-rich dust on apparently wet surfaces, which may be capable of being raised into a cloud by a comparatively mild initiating explosion. Mine explosions in this country have been ascribed to this hazard.*

*iv) Any deposit of dust or sludge should be regarded as potentially capable of being raised into the air by an explosion.*

accumulation of coal dust is a serious hazard in a mine, I suggest that the matter of wetted coal dust is something the Regulator should consider when revising the Regulations.

Moreover, despite my determination that subsection 133.(1) does not apply to the accumulation observed by safety officer Gallant at the time of his investigation, Mr. Barrett's testimony was that the coal could have accumulated there over more than one shift, that the quantity of the accumulation of coal was significant, and that the coal could become a health and safety problem at some point with the rollers turning on the coal. Given the fact that the coal accumulation was in contact with the belt and the rollers and safety officer Gallant's testimony that he saw signs of the conveyor belt rubbing the coal, I agree with him that the significant accumulation he observed constituted a fire hazard and that a direction was needed to deal with the situation and to ensure such accumulations do not occur in the future.

Except possibly for paragraph 133.(3)(b), there is no specific provision in the Regulations that would apply to the accumulation of coal observed by safety officer Gallant. I must therefore rely on section 124 of the Code to deal with the fire hazard that existed in connection with the accumulation, Section 124 reads:

*"Section 124. Every employer shall ensure that the safety and health at work of every person employed by the employer is protected."*

Consequently, I HEREBY VARY item 2 of the direction that safety officer Gallant issued to Cape Breton Development Corporation on June 3, 1999, pursuant to subsection 145.(1) of the Code by substituting reference to subsection 133.(1) of the Regulations with section 124 of the Code. Item 2 of the direction now reads:

"2. Section 124 of the Canada Labour Code, Part II

There is an accumulation of coal around 8 of the bottom rollers located in 9 East bottom creating a fire hazard."

Decision rendered February 29, 2000.

Douglas Malanka  
Regional Safety Officer

---

*v) The addition of water alone to coal dust, though it reduces the hazard of explosion, cannot ensure safety under all conditions whatever the proportion of water present. On the other hand a level of safety at least comparable with that attained in dry conditions is ensured provided the total combustible content (including water) of the deposit is not less than that required in dry conditions. This in general would require the spreading of stone dust..."*



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

DIRECTION TO THE EMPLOYER UNDER PARAGRAPH 145(1)

On June 3<sup>rd</sup>, 1999, the undersigned safety officer conducted an inspection in the work place operated by CAPE BRETON DEVELOPMENT CORPORATION, being an employer subject to the Canada Labour Code, Part II, at POINT ACONI ROAD, POINT ACONI, NOVA SCOTIA, the said work place being sometimes known as Prince Mine.

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

1. Paragraph 125(u) of the Canada Labour Code, Part II, section 48 of the Coal Mines (CBDC) Occupational Safety and Health Regulations

There are unguarded pieces of equipment that are likely to be hazardous to the safety of an employee:

- a) on the conveyor drive located in 9 East slant at No. 4 Decline
  - i) the coupling between the motor and the gear box was exposed
  - ii) the snub roller (approx. 12" diameter), located on the outbye end of the drive and below the bottom belt was exposed.
  - iii) the snub roller (approx. 6" diameter), located at the end of the jib and below the bottom belt was exposed.
- b) on the conveyor drive located in 9 East bottom:
  - i) the snub roller (approx. 12" diameter), located on the outbye end of the drive and below the bottom belt was exposed.
  - ii) the snub roller (approx. 6" diameter), located near the middle of the jib and below the bottom belt was exposed.

2. Paragraph 125(u) of the Canada Labour Code, Part II, section 137.1 of the Coal Mines (CBDC) Occupational Safety and Health Regulations

There is an accumulation of coal dust around 8 of the bottom rollers located in 9 East bottom

3. Paragraph 125(j) of the Canada Labour Code, Part II, section 12.6 of the Canada Occupational Safety and Health Regulations

There are two employees in 9 East bottom that are not wearing eye protection and are therefore exposed to a hazard of injury to the eyes.

Therefore, you are HEREBY DIRECTED, pursuant to subsection 145(1) of the Canada Labour Code, Part II, to terminate the contraventions no later than June 3<sup>rd</sup>, 1999.

Issued at Point Aconi, this 3<sup>rd</sup> day of June 1999.

Bill Gallant  
Safety officer  
1829

To: CAPE BRETON DEVELOPMENT CORPORATION  
PRINCE MINE  
POINT ACONI ROAD  
POINT ACONI, NOVA SCOTIA  
B0C 1B0

SUMMARY OF REGIONAL SAFETY OFFICER DECISION

Applicant: Cape Breton Development Corporation (Prince Mine)

Respondent: None

**KEY WORDS**

coal dust; accumulation; mined coal; inert stone dust; dust suppression; water; fire hazard.

**PROVISIONS**

*Code:* 124; 125.(u); 145.(1); 145.(2)

*Coal Mines (CBDC) Occupational Safety and Health Regulations:* 133.(1), 133.(3)(b)

**SUMMARY**

On June 3, 1999, a safety officer with Human Resources Development Canada conducted an inspection of Prince Mine at Point Aconi Road, Point Aconi, Nova Scotia. The safety officer found an accumulation of coal below a conveyor belt that was up to at least 8 of the conveyor belt rollers. He issued a direction pursuant to subsection 145.(1) of the Canada Labour Code, Part II (Code), and among other things ordered the Company to remove the accumulation of coal dust before the conveyor belt was restarted. The employer disagreed that the accumulation of coal constituted coal dust under subsection 133.(1) of the Coal Mines (CBDC) Occupational Safety and Health Regulations (Regulations) and requested that this portion of the direction be varied.

The Regional Safety Officer agreed that the coal accumulation observed by the safety officer did not constitute coal dust because it was wetted or treated with inert stone dust. He found, however, that the coal in contact with the rollers constituted a fire hazard and varied the direction and substitute the reference to subsection 133.(1) of the Regulations with section 124 of the Code.