THE PROVINCIAL COURT OF MANITOBA

IN THE MATTER OF:	**THE FATALITY INQUIRIES ACT**
AND IN THE MATTER OF:	**JAMES FRIESEN, Deceased, and DAVID SCHROEDER, Deceased.**

APPEARANCES:

Mr. Sean Brennan, for the Crown,
Mr. James Edmond, for CanAmera Foods Ltd.,
Ms. Marjorie Webb, for Workplace Safety and Health Division, Department of Labour,
Mr. and Mrs. Peter Friesen, for the family of the deceased, James Friesen.

Release Date: October 31, 2002

Manitoba

The Fatality Inquiries Act

Report by Provincial Judge on Inquest

Respecting the deaths of David Schroeder and James Friesen

An inquest respecting the said deaths was held April 2nd to April 11th, inclusive, as well as April 23rd, 2002, at the City of Winnipeg in Manitoba. A site visit took place April 29th, 2002, at the Town of Altona in Manitoba. A standing hearing was held on February 15th, 2002. I hereby report as follows:

The names of the deceased are David Schroeder and James Friesen.

The men died on November 21st, 1996, at approximately 12:50 p.m. on the site of CanAmera Foods Limited, 35 – 10th Avenue N.W., Altona, Manitoba, as the result of an accident at work. The cause of death of both David Schroeder and James Friesen was asphyxiation.

I hereby make the following recommendations as set out in the attached schedule.

Attached hereto are the exhibits filed by me.

Dated at the City of Winnipeg, in Manitoba this 28th day of October, 2002.

"Elliott, J."
Judith Elliott
Provincial Judge

PURPOSE OF INQUEST

The Chief Medical Examiner for the Province of Manitoba called this inquest on February 26th, 2001. He outlined the following reasons for doing so:

1. To determine the circumstances relating to the deaths of David Schroeder and James Friesen; and

2. To determine what, if anything, can be done to prevent similar deaths from occurring in the future.

The duties of a provincial judge following an inquest are set out in section 33 of ***The Fatality Inquiries Act,*** which is attached as Appendix A to this report.

THE FACTS – SUMMARY

On November 21st, 1996, David Schroeder, in the course of his employment with CanAmera Foods, Altona location, entered a railway tank car to retrieve a fallen "downspout" or pipe from the bottom of the car. Entry was through a 20-inch diameter manhole at the top and down a portable ladder. The tank car had been filled with nitrogen and as such contained almost no oxygen. When human beings are faced with a "sudden and severe" deficiency of oxygen, consciousness is lost within five to ten seconds. Within approximately that time, David Schroeder collapsed unconscious. Another worker, initially thinking that Mr. Schroeder had suffered an injury, called out to him. James Friesen overheard this, went over, and upon being told that Mr. Schroeder was injured, entered the tank car to assist him. Upon reaching the bottom of the car, he too collapsed. Others came to help, including Peter Friesen, the brother of James Friesen. By that time, workers were aware that something was wrong with the atmosphere in the tank car. Peter Friesen put on a self-contained breathing apparatus (SCBA) and attempted to enter through the manhole, but did not fit. He therefore took off the apparatus, asking to have it passed to him once he was through the manhole. However, he became unconscious within seconds of his head passing through the manhole, and did not reach for the apparatus. Peter Friesen was kept alive through the introduction of oxygen to the tank car. David Schroeder and James Friesen did not survive.

THE FACTS - DETAILED VERSION

The Plant

CanAmera Foods in Altona employs approximately 70 people. The plant extracts oil from seeds, including canola, flax and others. The remainder of the seed is processed into a high protein animal feed. The extraction occurs through a number of processes. The final steps take place at the refinery, from which oil is shipped for sale. Some of the oil to be shipped is loaded into tank cars, which are placed or "spotted" at various positions outside the refinery building. A "site plan" of the Altona plant of CanAmera Foods and a map of the Town of Altona, are attached as Appendices B and C to this report.

There were, at the time of the accident, two types of tank car, each with a different process involved in their loading. The tank cars were commonly referred to as "Best Foods" and "Salad" cars. Best Foods, at that time a significant customer of CanAmera Foods, required that oil shipped to it be blanketed in nitrogen. The nitrogen blanket forced out oxygen, preventing oxidization, which could cause rancidity. The Best Foods cars were either manufactured or retrofitted with a downspout. The downspout ran vertically from an opening underneath a cap at the top of the tank car down almost to the bottom of the car. These cars were returned from the customer full of nitrogen. They were to be prepared for loading by a supervisor or manager. The oil would then be pumped through the small hole, down the downspout, to the bottom of the tank car underneath the nitrogen blanketing, thereby preventing exposure to oxygen. Because some of these cars were retrofitted, on occasion the downspout would vibrate loose and fall to the bottom of the car.

A "salad" car did not require nitrogen blanketing before the oil loaded. A salad car was filled through the twenty-inch manhole at the top of the tank car. Sometimes, Best Foods cars were changed to salad cars, because their downspouts had vibrated off. There would still be a nitrogen environment in these tank cars, as the car would have returned from Best Foods full of nitrogen. Subsequently, the car would be filled by CanAmera employees through the manhole instead of through the downspout. It would then be shipped to a customer who did not require nitrogen blanketing.

The Accident

On November 21st, 1996, Randy Gerbrandt was working as a refinery operator. His duties included cleaning presses, making canola oil, and cleaning and loading rail cars. He had been so employed for almost two years. In preparing to fill a tank car, he noticed its fallen downspout. He was under the impression that fallen downspouts should be removed lest they cause injury to someone if the train derailed. Approximately one week before, another car had arrived with a fallen downspout. On that occasion the downspout had been retrieved, but only, Mr. Gerbrandt believes, after a Confined Space Entry Permit had been obtained and an oxygen test done. Unfortunately, the Confined Space Permits filed during the Inquest neither confirm nor disprove Mr. Gerbrandt's recollection.

Prior to lunch, Mr. Gerbrandt opened the manhole, and noticed the seals which indicated that it was a nitrogen-filled car. He then spoke with the Traffic Coordinator, who confirmed this information. There were also placards attached near the bottom of the car, which read "CAUTION-NITROGEN ATMOSPHERE VENTILATE BEFORE ENTERING". However, the placards were not visible from the top of the car, where entry was made, and thus do not appear to have alerted either Mr. Gerbrandt, or anyone else, to the fact that the car was filled with nitrogen. Mr. Gerbrandt covered the manhole to ensure that dirt would not blow in. He asked David Schroeder to help him remove the downspout, because Mr. Schroeder "was assigned to maintenance and had the time". Mr. Schroeder was also asked because, Mr. Gerbrandt said, Mr. Schroeder was his "superior", since Mr. Schroeder had trained him. According to Mr. Gerbrandt, Mr. Schroeder was made aware that the car was nitrogen-filled.

Mr. Gerbrandt then had lunch on the second floor of the refinery with David Schroeder, James Friesen and Henry Reimer. There was a discussion at lunch regarding the problem of fallen downspouts. Apparently part of the discussion was to the effect that fallen downspouts could cause injury if the train derailed, so they should be removed if possible, or, in Mr. Gerbrandt's words, "if it worked". However, he testified that there was no discussion about following safety precautions for confined space entry. When asked why he did not raise the safety issues during this discussion, he answered, "I don't know. It puzzles me to this day, I don't understand why I didn't."

Mr. Gerbrandt started his lunch break that day at approximately 12:10 p.m. His lunch break was one-half hour and ended at approximately 12:40 p.m. Mr. Gerbrandt indicated that there was no particular urgency in removing the downspout, and it could have waited until the supervisors, Les Martens, the refinery manager, and Jake Froese, the supervisor or "leadman," returned to the plant from their one-hour lunch break. However, prior to lunch, Mr. Gerbrandt had suggested to Dave Schroeder that they remove the downspout after lunch, and Mr. Schroeder had agreed.

Mr. Gerbrandt testified that he knew, at the time of the Inquest, that that he could have sent the car out without removing the downspout; but he was not sure at what point he learned this.

In any event, immediately after finishing lunch at approximately 12:40 p.m., Randy Gerbrandt and David Schroeder went outside to remove the downspout. They did not comply with CanAmera policies, which mandated that, prior to entering any confined space, a Confined Space Entry Permit had to be initiated and atmospheric testing completed. These failures occurred despite the facts that there were entry permits kept in the refinery lab, next door to the lunchroom, and that James Friesen was a qualified tester.

As a result, sometime between 12:40 and 12:45 p.m., Dave Schroeder removed the ladder from the catwalk, lowered it into the tank car, and climbed into the manhole. He climbed down the ladder. When he got to the bottom, he turned around because the pipe was behind him. Mr. Schroeder picked up the pipe and was going to hand it to Mr. Gerbrandt. Mr. Schroeder instead dropped the pipe and fell down, face up. Mr. Gerbrandt testified, "At that point I thought he had twisted his ankle because of the way his legs were laying". Mr. Gerbrandt did not notice any gasping or struggling, only that Mr. Schroeder, "… just looked up at me and kind of laid down, almost gently." According to Mr. Gerbrandt, oxygen deficiency did not initially come to his mind. Mr. Gerbrandt called to Mr. Schroeder to see what was wrong. Mr. Schroeder did not respond.

THE RESCUE

(a) CanAmera Employees

James Friesen was nearby and responded to Mr. Gerbrandt's calls to David Schroeder. Mr. Gerbrandt advised James Friesen that he did not know what was wrong, but that he thought Mr. Schroeder must have sprained his ankle "or something" and that "we need to go check it out and find out what is wrong with him… So I asked him, or told him to go in and help Dave." Mr. Friesen did not ask whether or not there had been any oxygen testing done or a permit obtained, nor did he raise the issue of whether there was nitrogen in the tank car. As Mr. Gerbrandt had the two-way radio, it was Mr. Gerbrandt's belief that he should stay at the top and that Mr. Friesen should go in. Mr. Friesen then climbed into the tank car. He got to the bottom of the ladder, turned towards Mr. Schroeder and lay down on top of him, face down. It still did not occur to Mr. Gerbrandt that there was a problem with the atmosphere in the tank car.

Henry Reimer was unloading another tank car, heard Randy Gerbrandt yelling, and, upon hearing that the two men were down in the car, began to descend the ladder. Although he had had lunch with Dave Schroeder, Randy Gerbrandt, and James Freisen, and heard talk about removing the fallen downspout, he did not recall hearing, or at least paying attention to, any discussion about the car having a nitrogen atmosphere. However, when he looked down, he realized that there was something "definitely wrong" and stopped his descent. He told Mr. Gerbrandt to call for help.

Mr. Gerbrandt radioed the boiler room, which was the communications centre within the plant. According to him, he said that there were "some guys in the car and we needed some help." About this time Mr. Gerbrandt realized, or was told, that there was no oxygen in the tank car. Mr. Gerbrandt went into the refinery to get a tool to open the bung at the bottom of the car, in order to pipe in breathable air. He got it open, but then had to retrieve another tool to break through the frozen oil. After breaking through the oil, he went into the refinery and found an air hose. He gave it to Pete Hildebrand. Mr. Hildebrand, as a result of the radio call, had by that

time arrived from another part of the plant, along with Peter Friesen, Erv Hilliard and Ed Dueck. Mr. Hilliard and Ed Dueck arrived with two sets of self-contained breathing apparatus. Mr. Gerbrandt heard discussion of Mr. Friesen going into the car with an air tank, told him to make sure to put the mask on, and then went to watch for the ambulance. He waited on 10th Avenue N.W., the street that runs through the plant, for the ambulance to arrive. When the ambulance arrived, Mr. Gerbrandt told the emergency personnel that there were men in a tank car and that the responders would need their air tanks. Shortly afterward, supervisor Jake Froese arrived and told Mr Gerbrandt to go into the refinery building. Mr. Gerbrandt did and noted the time on the clock read 12:59 p.m. He remembers thinking that "there was still some hope for these guys."

(b) Communication and Response

Paul Freier was the engineer in the boiler room who received and transmitted the emergency calls. The boiler room is located in a different part of the plant than the refinery. The communication system is such that the plant has a two-way radio system and all operators carry two-way radios. Randy Gerbrandt, as a refinery operator, carried one on his belt. It was also equipped with a shoulder microphone.

At about 12:45 p.m. Mr. Freier received a radio call from an unidentified person at the refinery. The person was extremely upset and was requesting or demanding help. Mr. Freier was left with the understanding that there was a problem with somebody in a tanker. His first response was to find his supervisor, Erv Hilliard, and notify him. He went to the building next door, the machine shop, which was about twenty seconds away from the boiler room. Mr. Hilliard and Mr. Ed Dueck, who was also in the vicinity, left immediately, stopping only to retrieve Scott Air Packs, a type of self-contained breathing apparatus, from outside the boiler room. Mr. Freier estimated the time from when he received the radio call until he notified Mr. Hilliard at between thirty seconds and a minute. After his return to the boiler room, Mr. Freier received another radio call from the refinery, this time asking for an ambulance. He immediately placed a telephone call to the Altona Hospital, indicating that an ambulance was required at the refinery of CanAmera Foods. There was another radio call from the refinery within the next one or two minutes, asking where the ambulance was. Mr. Freier phoned the hospital again and was told that the ambulance was on its way. The channel on which the communication was

taking place was an open channel. Therefore, all of the operators in the plant would have heard that there was a problem with a man in a tank at the refinery. As a result, CanAmera workers converged from various locations in the plant.

Eileen Kehler, who was the receptionist at the Altona Hospital, answered Mr. Freier's calls. One of Ms. Kehler's duties was to receive emergency calls for ambulances. The protocol was that she was then to call members of the volunteer-staffed Altona Emergency Services, in order to locate two drivers to dispatch. Unless it was clear that it was not, each call was to be listed as "code red" or "life-threatening". On the day in question, Ms. Kehler received the first call at 12:48 p.m., a time that she recorded on a dispatch form. She then made a number of calls, finally locating two drivers. By 12:51 p.m. she recorded that she had located and dispatched Wayne Bergen and Alan Mart. The information recorded was that an ambulance was needed at CanAmera Foods for a patient that was "having an attack or something". No other information was provided. Thus only one ambulance was dispatched and no breathing apparatus requested. At 12:55 p.m. Ms. Kehler received another call from Mr. Freier asking where the ambulance was. She did nothing further because no further information was provided. Shortly after 1:00 p.m., Linda Abrams, a nurse's assistant, came to ask for advice. She was on duty at the nursing station, fifty or sixty feet away from Ms. Kehler, and had received a communication that more ambulance attendants were required at the scene. Ms. Kehler then located two more drivers and dispatched them. This was done by just after 1:00 p.m. A dispatch form filled out by Linda Abrams, indicated that a subsequent page for responders went out between 13:05 p.m. and 13:10 p.m.

Meanwhile, in response to the initial call to the boiler room, Erv Hilliard, Ed Dueck, Pete Hildebrand and Peter Friesen converged at approximately same time on the refinery. They probably arrived within two to three minutes of being notified, within three to four minutes of the first call to the boiler room. They went first into the refinery, as they did not know what type of tank was involved. Directed outside to the tank car, Mr. Hilliard took control of the accident scene. Peter Friesen said that he wanted to go into the tank car, as it was his brother inside. He was told by the others that he would have to wear breathing apparatus. He put on an air tank and tried to enter through the manhole. However, he was too large to enter wearing the apparatus. Mr. Friesen then insisted that he would take the apparatus off and climb below the manhole, at which time the apparatus

could be lowered to him. A rope was tied around him and he started his descent. According to Mr. Reimer, describing Pete Friesen going in:

> When he started climbing down, just as his head was past the manhole, his head just hung down. About halfway down the ladder he collapsed.

Mr Hilliard described Mr Friesen going further before he collapsed, but described him being "wobbly" and unresponsive before that. Mr. Dueck indicated that, although he was somewhat aware that nitrogen could pose a hazard, he was not expecting the sudden reaction that he saw in Peter Friesen and described as follows:

> It was just sudden, like I would have thought he would have felt short of breath, coughed, maybe but there was nothing. He took a breath and he was out.

Although there is some difference between the testimony of these witnesses as to when Mr. Friesen became unconscious, by all accounts it would have been very soon and certainly in less than ten seconds. The men tried to pull Mr. Friesen up, but the rope slipped over his shoulders and off. The first members of the Altona Emergency Services arrived and Mr. Reimer went down to speak to them. In the meantime, Messrs. Dueck and Hilliard decided to open the backup valve on the breathing apparatus, thus causing it to emit a continuous flow of air. They tied the air tank to a rope and Mr. Hilliard lowered the apparatus such that the mask was in the vicinity of Peter Friesen's face, thus giving him some breathable air. This was difficult, as Mr. Friesen had fallen so that he was positioned leaning against the side of the car. Mr. Hilliard had to swing the apparatus up higher than Mr. Friesen's face, watch it drop past his face toward the bottom of the car, and then repeat the motion over and over. He repeated this many times, expending two tanks of air. Each tank held approximately ten minutes of air. This action almost certainly saved Peter Friesen's life.

Mr. Hildebrand meanwhile climbed down from the tank car to ground level to find more air hose. About the same time, other workers had found another air hose. Mr. Hildebrand coupled, or attached, the air hoses. He then went up to the top of the tank car and gave the now-coupled hose to Erv Hilliard. Mr. Hilliard cut the coupler middle valve off the end of the air hose so that there would be a full flow of air. He then put the air hose into the manhole at the top of the tank car. At that time neither Mr. Hildebrand nor Mr. Hilliard could observe signs of life from either Mr. Schroeder or Mr. James Friesen. Mr. Peter Friesen did show signs of life. The end of the hose

was quite a distance from the mouth and nose of Mr. Friesen, in part because it was swaying as a result of its being under pressure. The air hose was also quite a distance from David Schroeder and James Friesen. As the air hose would not reach far enough, Mr. Hildebrand made a decision to go underneath the tank car and try to insert the air hose up from the bottom. He was unsuccessful at first, as something, probably a body part, was in the way. However, after wiggling it around, he was able to get the air hose approximately one foot up into the tank car. The air hose would have been approximately the length of Peter Friesen away from his mouth and nose – five to six feet. Mr. Hildebrand was concentrating on assisting Peter Friesen because he had observed signs of life from him. The hose was still swaying but not as much as when the hose was inserted from the top. Mr. Hildebrand kept holding the air hose there until, as the result of a request made by Ed Dueck, other workers arrived with oxygen tanks. The air hose was removed, and the workers pushed one of the very large welder's oxygen tanks underneath. The three men held it up against the hole and completely opened the valve. The "nipple" that was on the oxygen tank protruded into the tank car and pure oxygen was allowed to flow in. Eventually a member of the Altona Emergency Services directed the CanAmera employees that there was sufficient oxygen and they should shut it off, because if there was too much oxygen, a spark could ignite a fire. By that time, between 1:10 and 1:15 p.m., the oxygen level, at least at the bottom of the tank car, was 21%, approximately the percentage normally found in the air we breathe.

When the Altona Emergency Services personnel first arrived, members were going to use CanAmera's breathing apparatus, but then decided that they were not familiar with it and would wait for their own equipment. Their equipment subsequently arrived and was used in the rescue. At this time Peter Friesen was still exhibiting signs of life.

Mr. Hilliard called for and tested a winch to lift the victims out of the tank car. When the winch was hooked up and emergency personnel were ready, Mr. Hilliard hooked up the winch to the harness. Al Mart of the Altona Emergency Services was then dropped into the tank car with another harness to put around Peter Friesen. A second responder tried to enter the manhole but did not fit with his equipment. A smaller responder, James Stoesz, instead went down. Mr. Alan Mart had difficulty getting the harness onto Mr. Friesen. Ultimately the rope was used instead and Peter Friesen was brought up. He was gasping for air periodically, both in the tank car and when he came out.

David Schroeder and James Friesen were then removed, neither showing any signs of life. The emergency responders were brought up; one of whose low air alarm had gone off and who had had his tank changed while in the tank car. By the time the second responder had been brought up, his alarm had gone off as well. He was alone in the car at that point, so a further rescue might well have become necessary.

(c) Altona Emergency Services

Altona Emergency Services is a volunteer-based program. Eileen Kehler had contacted Alan Mart and Wayne Bergen at home. Both headed to the fire hall. Mr. Bergen, who had been contacted first, took three or four minutes to travel from home. He was first to arrive at the fire hall. He prepared the ambulance. Mr. Mart, contacted somewhat later, travelled from his home about six blocks away, the trip being about two minutes. He indicated that it would have taken about thirty seconds to get into the ambulance and about another minute to get to CanAmera. On arrival, CanAmera employees informed them that this was not just a medical call, but that there were three men trapped inside a tank car. Mr. Mart, as Captain, was the senior member on scene and therefore took charge. He asked Wayne Bergen to get their equipment out of the ambulance and he radioed to the hospital that they required back up.

Mr. Mart then proceeded from the ambulance towards the tank car, a short distance down the tracks. When he approached the car, he noticed that an oxygen cylinder was being used to introduce oxygen to the tank. He asked the employees if they had compressed air and stated that he would prefer they use that, because the oxygen, especially with vegetable oil coating the tank, was an explosive hazard. He asked Wayne Bergen to again call for a full fire response because it had been a couple of minutes and he had heard nothing on the pager. This call would have implicitly included a second ambulance and two fire trucks. All the Altona Emergency Services' sets of breathing apparatus were stored on one of the fire trucks.

Upon arrival at the top of the tank car, Mr. Mart told CanAmera employees that he was taking charge of the scene and that no one was to enter the car without his approval. After trying on a set of CanAmera breathing apparatus, he decided he was not sufficiently comfortable with it. He therefore decided to wait for the Emergency Services' equipment. The oxygen concentration in the tank car was measured after air and oxygen had

been introduced for some time. At the top it was 19.2%, still slightly below the safe lower limit, and at the bottom, where the pure oxygen was being introduced, it was 20.9 or 21 %.

Robert Stoesz, the Fire Chief, arrived about the same time as the second ambulance. He took control of the situation on the ground, ordered more equipment, and stopped the use of the oxygen tanks in order to prevent an explosion.

When Mr. Mart observed the men in the car he saw signs of life in Peter Friesen, but not in the others. The Emergency Services' breathing apparatus eventually arrived and Mr. Mart put on apparatus, a harness and a safety line, and was lowered by winch into the tank car. He tried to comfort Peter Friesen while waiting for another responder.

Apparently, it was difficult manoeuvring the victims because they were all coated with oil. It was approximately -20 degrees Celsius, with everyone's hands cold. In addition, there was very little room at the top of the tank car when the men were brought up on the winch. There was also a great deal of noise in the car, with the sounds of the pressurized oxygen coming in and echoes caused by noise bouncing off the walls of the metal tank.

After the second man, James Friesen, was removed, Mr. Mart's air supply was running out. He requested another set of breathing apparatus. However, he was not heard properly with the noise and so only a tank was sent down. He had to kneel down, holding his breath, while James Stoesz changed his air tank. By the time Mr. Stoesz had been brought up, his oxygen alarm had gone off as well. This was potentially dangerous, as Mr. Stoesz was alone in the tank car at the time.

Mr. Mart testified that while he was in the car, Peter Friesen was breathing in a fairly normal way. Obviously, the introduction of oxygen helped Mr. Friesen considerably.

An ambulance can cover the distance from the fire hall to the plant in thirty seconds to one minute. However, there is a significant period of time required to contact available volunteer rescue personnel from their homes or work and for them to then get to the fire hall. The time of the first call received by the dispatcher at 12:48 p.m., until the time the first

ambulance arrived at 12:59 p.m., was approximately eleven minutes. That length of time is prohibitively long in a situation such as this, where the victims are without oxygen and can only be expected to live a matter of five to six minutes. Apparently there are now two full-time drivers and an ambulance situated at the hospital at any given time during the day. Although the hospital is slightly farther away from the plant than is the fire hall, it is of course preferable to have drivers in the same place as the ambulance. It was not clear from the testimony whether or not this would apply to evenings and weekends as well, but obviously having personnel on standby at the same place as the ambulance drastically shortens response time.

SAFETY ISSUES

(a) Definition of Confined Space

The Manitoba Department of Labour, Workplace Safety and Health Division, has "Guidelines for Confined Entry Work", which are attached as Appendix D to this report. The guidelines provide one definition for confined space. The definition reads as follows:

> **Confined Space: refers to a work area which:**
>
> - is not intended for continuous worker occupancy.
> - has by design, structure, location, limited or restricted entry and exit.
> - may contain or produce dangerous accumulations of hazardous gases, vapours, mists, dusts, fumes, fog, lack or enrichment of oxygen and biological agents.

The Federal government, in its regulations under Labour Code Canada - Occupational Safety and Health Regulations, Part XI Confined Spaces, offers a similar but slightly different definition. Section 11.1 defines a confined space as follows:

> "confined space" means an enclosed or partially enclosed space that
> (a) is not designed or intended for human occupancy except of the purpose of performing work,
> (b) has restricted means of access and egress, and
> (c) may become hazardous to any person entering it owing to
> (i) its design, construction, location or atmosphere,
> (ii) the materials or substances in it, or
> (iii) any other conditions relating to it.

The provincial definition applies to CanAmera Foods today. It is, as Counsel for CanAmera pointed out, not clear whether or not all three criteria need to be present before a vessel or place is a confined space. What if, for example, the air was tested as safe and there was absolutely no possibility that it would change? Arguably that would not be a confined space under the provincial definition. But what if the space, like the tank car in question, has curved, slippery walls and a very small, high opening? A worker could easily slip and break a leg inside and then what? The federal definition, which is both broader and more certain, would seem to cover such a situation, and is therefore, in my opinion, preferable.

(b) Oxygen Deprivation

Mr. Peter Griffin, an expert on Industrial Hygiene, prepared two reports and testified, among other things, about the response of humans to the inhalation of gases deficient in oxygen. Mr. Griffin's qualifications are set out in the list of witnesses, which is at the end of this report, and his reports are attached as Appendices E and F. Included in Mr. Griffin's first report is Table 1. Responses of Humans to the Inhalation of Atmospheres Deficient in Oxygen. (adapted from Patty's Industrial Hygiene and Toxicology by Clayton and Clayton, fourth edition, page 4599)

Oxygen Concentration Symptoms or Phenomena

20.9 %	Normal oxygen content of atmospheric air.
19.5%	Minimum oxygen content allowed in Manitoba.
12 –16%	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10 –14 %	Consciousness continues, emotional upsets, abnormal fatigue upon exertion, disturbed respiration.
6 –10%	Nausea and vomiting, inability to move freely, loss of consciousness may occur; may collapse and although aware of circumstances, be unable to move or cry out.

below 6 %	Convulsive movements, gasping respiration; respiration stops and a few minutes later heart action ceases.

The tank car in question would have contained at least 99% nitrogen gas and therefore not more than 1% oxygen. That was therefore well below the minimum 19.5% minimum level for Manitoba and below the 6% where death results within minutes. We learned from Mr. Griffin's first report that:

> When body cells do not receive oxygen, they begin to die. In the case of neural cells, they are affected very quickly because they have a high metabolic rate (and thus a high rate of oxygen consumption), and they are not able to function without oxygen (no anaerobic capability), and they have no storage ability for maintaining reserves of oxygen. If the deficiency of oxygen is sudden and severe, consciousness is lost within **five to ten seconds** and permanent brain injury is likely within two minutes. Death is likely in five to six minutes. (emphasis added)
>
> (Patty's)

Although the rail car was filled with almost 100% nitrogen, nitrogen itself was not the issue here. The normal air we breathe is composed of 78% nitrogen. However, because nitrogen in this case replaced almost all oxygen, oxygen deprivation was the issue. Further, because nitrogen gas is colourless, tasteless and odourless, as well as having about the same density as oxygen, there would be no indication to a person entering through the manhole, that he or she was entering anything other than normal breathing air. Therefore, they would not, for example, take a deep breath and hold it, but would rather continue to breathe the air without oxygen, resulting in a "sudden and severe" deficiency of oxygen.

(c) Jurisdictional Conflict Impacting on Company Safety Policy

At the time of the accident, and for some time thereafter, there was confusion as to whether federal or provincial law applied. This was eventually decided by the Manitoba Court of Appeal in *R. v. CanAmera Foods*, [2000] M.J No. 312. The extraction plant and seed storage area, refinery, warehouse, and oil storage area are under provincial jurisdiction.

The Transfer Facility (for the most part the elevator) is under federal jurisdiction.

(d) Company Documents and Policies Relating to Safety Issues

(i) CanAmera Confined Space Entry Procedure in Place at Time of Accident

In 1994 CanAmera Foods, as a result of a directive from its head office, issued its first safety manual. This was revised in 1995 and it was the revised edition that was in place at the time of the accident. The manual, under the title "Confined Space Entry" indicated that one of its' purposes was to ensure that the (federal) Occupation, Health and Safety Act, General Accident Prevention Regulation, regarding confined space entry, was adhered to. This regulation is not the one in force at present. However, if the procedure set out in that manual had been followed, it would, without doubt, have prevented the accident.

It provided, amongst other things:

> **CONFINED SPACE HAZARDS**
>
> … (4) An oxygen deficient atmosphere may be present or be created by the work being performed in the confined space.
>
> **…hazards unique to vegetable processing:**
>
> … 4) Oxygen deficiency – many rail cars contain nitrogen. Normal breathing air is 20.9% oxygen, a confined space becomes dangerous at 19.5% oxygen.
>
> **CONFINED SPACE ENTRY PROCEDURE**
>
> 1. Identify any of the mentioned hazards listed above.
> 2. Open as many entrances as possible and ventilate as long as possible.
> 3. Fill out a confined space entry permit with all the people involved, including your supervisor.
> 4. Check the atmosphere in the confined space using a gas monitor.
> 5. …

Neither the procedure nor the permit indicated that a confined space entry had to be initiated by a supervisor, although the original 1994 permit did make this clear. The procedure did however require a

supervisor's signature and obviously contemplated the supervisor signing before the entry.

The Confined Space Entry Permit in use at the time, if it had been properly completed, would probably have stopped entry by any of the workers. If the permit had been completed with all the people involved, including the supervisor, the supervisor would not have signed the permit, as there was no immediate need to retrieve the downspout. If atmospheric testing had been done, the test would clearly have showed that there was insufficient oxygen for an entry. I am attaching a copy of the permit, which is marked as Appendix G.

(ii) <u>Responsibilities of Management and Workers as set out in 1995 Version of Safety Manual</u>

The 1995 version of the Safety Manual laid out the responsibilities of each employee. The Plant Manager was responsible for "ensuring that effective health and safety policies and procedures contained in the Manitoba Safety legislation and otherwise developed, are implemented, administered and enforced". He was also responsible for "ensuring that safety awareness is entrenched as part of the operating philosophy at CanAmera Foods."

Managers were responsible for "conveying policy and procedures to the supervisors, their subordinate employees and ensuring that a healthy and safe workplace is maintained by," among other things, "ensuring regulations that require employees to wear the safety equipment provided, are complied with at all times". Finally, managers were responsible for "ensuring that employees are available to participate in workplace and safety training and education".

The Health and Safety Coordinator's responsibilities included responsibility for "conveying policy and procedure to ensure that a healthy and safe workplace is maintained by such things as acting as a resource person, developing policy, teaching, counselling, and advising," etc.

The responsibilities of supervisors and lead men involved, among other things:

- personally supervising and directing employees when doing hazardous work (hazardous work is that which is able or likely to cause loss, damage or injury);

- ensuring that they (were) thoroughly familiar with safe work methods for all jobs being performed under their supervision and insisting on their use at all times;

- ensuring proper execution of all work orders, permits and safety procedures;

- instructing new, transferred or loaned employees with respect to safety procedures and including issuing personal protective equipment.

- department safety sessions(were) to be conducted monthly;

- enforcing all Accident Prevention Rules issued by management and/or contained in Provincial Health and Safety legislation.

Employees were to, amongst other things, "comply with health and safety regulations and procedures".

(iii) <u>Safety Equipment Policy</u>

Under the title "Safety Equipment", a section of the 1995 Safety Manual entitled "Fall Protection" read:

> Safety belts and safety lines must be used in areas that require them to be worn, such as storage tanks, bins, high elevations, rail cars, or while working in areas that do not afford safety rails or other supports for safety. Each department is equipped with the proper harness and lines.

The Confined Space Entry Procedure document however, in referring to safety equipment, reads:

> Ensure all the safety equipment required for the job is available and in proper working condition. This <u>may</u> include a two way radio, harness and rope, gas monitoring equipment, hard hat, gloves, safety boots, clothing, lighting, ladders, and tools required for the job. (emphasis added)

The Confined Space Entry Permit also did not indicate what equipment was mandated.

Testimony during the Inquest did not refer to harnesses and lines or ropes as being required or even available at the time of the accident, and certainly it does not appear that they were normally used. An entry in the minutes of the Safety Committee, to be referred to later in this report, leads me to believe that harnesses and lines were not available in the refinery in 1996. The hoist that was available and eventually used in the rescue did not meet the CSA code for confined space entry.

(iv) <u>Monthly Safety Reports</u>

Monthly safety reports prepared by the then Safety Coordinator for the Plant Manager are also of assistance in determining how safety issues were viewed at the time of the accident.

In his report of July 1, 1995, Mr. Thiessen wrote:

> The refinery's oxygen and LSL meter has been repaired so that it is usable again. Les has been trained on how to use and take care of it; Jake was trained this week. Two safety videos from Ted Hamil came in last week; they deal with housekeeping, confined space entry, lock-out procedures, and slips and falls. They were shown to the Safety Committee and sent on.

In his weekly safety report for the week ending August 19th, 1995, Mr. Thiessen wrote:

> The refinery guys are saying that some of the cars are being returned off-loaded using nitrogen. This is usual practice for Best Foods and Clorox cars; however, some of the other cars may be as well. This makes it very dangerous to enter any car. The guys have been instructed to use their oxygen testers; however, I think clear danger signs need to be posted in the rail car area.

In his report for the week of September 16th, 1995, Mr. Thiessen wrote:

> Some signs were made for the refinery reading "DANGER!! DO NOT ENTER RAIL CARS WITHOUT OXYGEN TESTING (PERMIT REQUIRED). One sign was posted by the oxygen tester and two will be laminated and placed outside by the cars.

These signs were bright orange in colour. Mr. Thiessen had wanted Les Martens to post two on the loading ramp so that they were clearly visible before workers entered a rail car. However, Mr. Martens was concerned that the signs would deteriorate outside, and therefore posted a second sign in the lunchroom, where it was probably taken down when that room was painted in early October 1996. After the accident, the sign previously posted by the oxygen tester in the refinery lab was found by Mr. Thiessen, obscured behind the confined space entry permits in the clear cubical that held them. The third copy had ended up on Mr. Thiessen's file. David Schroeder was on long term disability leave from July 29th, 1995 to June 24th, 1996. He would have returned to work on June 25th, 1996, and would presumably have seen at least one of the signs before they were taken down.

(v) <u>Air Testing/Confined Space Entry Document</u>

Also posted in the refinery lab, beside the charger for the Scott Alert, was a document dated June 21st, 1995, from Dave Thiessen to Les Martens and Jake Froese, copy to Norm Buhr, the then plant manager, on confined space entry. Entitled "USING SCOTT ALERT FOR CONFINED SPACES", this document read:

> Every time a rail car is entered, a Confined Space Entry permit must be completed. To complete the form, the oxygen and combustible levels must be checked to assure safe entry. The supervisor should also be present to sign this document. Therefore, if Jake and Les are trained in the operation of the gas monitor, then that should be adequate.

The instructions, in regards to the checking of air quality using the tester, followed and included:

> The oxygen alarm is set at 19.5% and 25% which indicates an abnormal atmosphere and should not be entered.

At the end, there was another sentence:

> It is very important to remember that confined spaces are extremely dangerous. Usually a lack of oxygen in a confined space means death in several minutes. Therefore these kinds of precautions are necessary.

(vi) Refinery Operators' Manual

Also of significance is a page in the "Refinery Operators Manual", which detailed washing procedures for rail cars. It is dated September 24th, 1996 and reads:

> A 'Confined Space Entry permit' must be filled out. Remember the oxygen level must be over 20% and a safety watch person must be at the manhole at all times.

Nitrogen is not mentioned specifically in either document. However, nitrogen in itself is not dangerous – lack of oxygen is.

(vii) Sign Posted by Les Martens

Les Martens had posted a sign on the Safety Bulletin Board in the operator's lunchroom. I am assuming that this was the lunchroom in the refinery. Dave Thiessen testified that this sign read something to the effect of:

> At no time does anyone go into a car without proper testing and that there was nitrogen in some cars and that it was extremely dangerous to enter these cars and that you would be dead within a few seconds if you went into one of these cars.

The sign was posted prior to the accident, but was probably also removed when the lunchroom was painted in early October of 1996.

(e) Training

Prior to the accident, training in safety procedures was done both through mentoring, and by formalized instruction by the CanAmera Safety Coordinator. The mentoring process was one whereby an experienced worker would mentor a new worker for three to six months, teaching all aspects of the job. Mentoring is, according to Mr. Griffin, a good safety training method only if the experienced worker both knows and practices the correct safety procedures.

In the more formalized training, the CanAmera Safety Manual was reviewed with employees at "safety talks" conducted by Dave Thiessen. On May 11th, 1995, David Schroeder attended a talk in which there was an "introduction to new safety and health policy and procedure manual",

actually the 1995 revision. On May 18th, 1995 James Friesen and Randy Gerbrandt attended a similar session. During those sessions, confined space entry policy, as set out on the Manual, was reviewed. The Manual indicated that, before a confined space entry, there was a requirement for a Confined Space Entry Permit and a monitoring pre-test for oxygen. It was quite clear that testing had to be done for oxygen and a permit had to be obtained. That information had therefore been communicated to those involved, prior to the date of the accident, and appears to have been absorbed and understood, at least by Mr. Gerbrandt and James Friesen. The requirement that a supervisor initiate, or at least sign a Confined Space Entry Permit prior to entry, was apparently not understood, at least by Mr. Gerbrandt. Information regarding confined space entry was communicated to workers in a classroom type setting, and the whole Safety Manual, consisting of some twenty topics, was covered in the course of one afternoon. That is a great deal to cover in one session. However I am satisfied from other evidence at the Inquest, that workers were at least aware that entry into confined spaces required permits and testing.

On September 13th, 1995, after these sessions, Safety Coordinator Dave Thiessen attended the "Levitt" training program on confined space entry, put on by Biosystems Incorporated. A number of the hazards were identified at that time and Mr. Thiessen took note of them. Significant perhaps is the fact that he made a note in the Levitt manual, that "asphyxiation has been determined to be the leading cause of death in confined spaces". In regard to symptoms of oxygen deficiency, he wrote "one breath and you go down at 6% or less". I do not know whether or not these particular facts were communicated to workers or whether or not, if they were, they remembered or even appreciated them. Mr. Thiessen is certain, however, that he did tell them of the dangers of nitrogen and oxygen deficiency.

Audio-visual aids such as the video "Only Fools Rush In", available from the library of the Workplace Safety and Health Division, were not shown to employees, although they may have been viewed by the Safety Committee. "Only Fools Rush In" contains startling and frightening statistics regarding confined space entries and rescues. For example, one statistic quoted is that for every person who goes into and dies in a confined space, the average is that two or three rescuers perish with him. The video

also points out that entire fire departments have lost their lives trying to save someone from a confined space.

In the spring of 1996, Dave Thiessen conducted more training, in sessions of approximately two and one-half hours and covering just four topics, including confined space entry. These sessions took place March 14th and 21st, 1996. Peter Friesen, Randy Gerbrandt and Jim Friesen each attended one session. Jake Froese's name was on the list but was not checked off, so he may not have been present for some or all of the training. David Schroeder had been on long-term disability leave from July of 1995 and would not have attended.

Between the initial sessions and the second ones, Dave Thiessen would have attended the Levitt training program and would have had increased awareness of the immediate effects of oxygen deficiency.

Knowing that the workers involved in the accident were informed of the proper procedures, as well as other evidence heard, leads me to conclude that they were aware of the need for a permit and testing. There was however some confusion as to the requirement that the supervisor sign prior to entry. The issue as to whether or not harnesses and lines were required is also unclear, although it is fairly clear that they were not, as a matter of practice, used. Although aware of the requirements of a permit and testing, I am convinced that the workers did not fully appreciate the hazards, or the reasons for the procedures. If the full extent of the danger were appreciated, would any of the workers have entered?

Evidence revealed that in 1996, at the Altona plant, there were at least fifty-six confined space entries where testing was done and a permit filled out, often incompletely, but nevertheless filled out. I would have expected to see more, given that Henry Reimer testified to "always" car washing with James Friesen. There is only one 1996 permit that clearly shows their names together. It is possible that not all the permits, although filled out, were retained. In terms of the permits that were filled out, James Friesen was the person entering the tank car on five occasions, always for the purpose of car washing. There was not always an indication of oxygen testing being done, although when it was recorded as being done before Mr. Friesen entered, Mr Friesen did the testing. He was obviously trained to do it, and did do it. Mr. Friesen is shown entering a tank on one occasion with someone else doing the testing, but this was not a railway tank car. Mr.

Gerbrandt was never shown as entering a tank car, although he was the safety watch person for James Friesen on two permits dated April 30, 1996. David Schroeder's name is not evident to me on any permit. He was on long term sick leave from July 25, 1995 to June 24, 1996 and thus had only returned five months prior to the accident.

(f) <u>Safety Committee</u>

The minutes of the Safety Committee sometimes touch on issues relevant to this Inquest.

The minutes of the meeting of May 31st, 1995 indicate that "every employee had been given at least a two hour session to introduce the new safety manual" – that is the 1995 revision.

The minutes of September 27th, 1995 indicate "Dave plans on giving a seminar to all departments on 1) confined space entry; and 2) WHIMIS; and 3) radio procedures". The minutes also indicate "Bill Dixon pointed out that we need a confined space rescue drill". Bill Dixon was, at the time, the employee co-chair of the committee.

The minutes of November 29th, 1995 indicate "Dave plans on giving a seminar to all departments on 1) confined space entry; 2) WHIMIS; and 3) radio procedures. Following these seminars, the plan will be developed for a confined space rescue drill".

In the meeting of January 9th, 1996, under "Concerns or Problems" and under "Refinery" it was noted that "the safety harnesses need to be used when going in cars"- "action by Les", which would have meant Les Martens. It is not known what action was contemplated, whether this involved purchasing harnesses, making them available at the refinery, or, less likely, enforcing use of already available harnesses. As Mr. Martens was not at the meeting, I do not know if the discussion was ever communicated to him or what, if any follow-up occurred. There were also notations that date under "other business" - "Dave has purchased some books on Safety committee training; in-house training will commence soon. Also, Dave plans on giving employee training on Hot Work Permits, confined space entry, WHMIS and radio procedures, early this year." Another note reads "Bill Dixon thought we needed more conspicuous safety boards; he will look into this matter".

On February 28th, 1996 a notation indicates "Dave has purchased some books on safety committee training, in-house training will commence soon. Also, Dave plans on giving employee training on Hot Work Permits, confined space entry, WHIMIS and radio procedures early this year."

In April of 1996, a new procedure was developed whereby following each set of minutes, there would be a list of items that had been resolved since the last meeting and items which still required attention. Unfortunately, this was not done earlier and there is no indication that anyone went back to the previous minutes to see what remained outstanding. Therefore recommendations regarding the need for a confined space rescue drill and the purchase or use of safety harnesses for entry into tank cars, were apparently not followed.

I was pleased to see that under ***The Safer Workplaces Act (Workplace Safety and Health Act Amended),*** which received Royal Assent August 9, 2002, employers are required to respond to recommendations of workplace committees within thirty days. The relevant provision is subsection 41.1(2). Sections 40 and 41 deal generally with workplace safety and health committees and representatives and are reproduced as Appendix H to this report.

Similarly, I suggest that future changes to safety procedures be reviewed by the Safety Committee and receive worker feedback.

(g) Enforcement

In regards to enforcement, I was unable to find any written policy in either the 1994 or 1995 versions of the safety manual. In any event, Mr. Thiessen described the enforcement policy as a three to four tier type of discipline in which minor infractions resulted in oral warnings; more severe infractions in written warnings, and subsequent infractions in suspension and termination. Preceding the accident, confined space entry violations were considered minor violations, for which an oral warning would have been suitable. It appears that, prior to the accident, discipline for safety breaches was extremely rare, if not non-existent.

Many, if not most, of the Confined Space Entry Permits filed at the Inquest, were not properly completed. It was Mr. Thiessen's recollection that he had raised their improper completion with the Plant Manager, Norman Buhr. Mr. Thiessen did not receive all the completed permits and there was no requirement at the time for the Safety Coordinator to collect them in order to check for completeness. Mr. Thiessen also indicated that he became aware of one confined space entry that took place without a permit. This was brought to his attention through the Safety Committee and was within the year prior to the accident. It did not involve an entry at the refinery but rather one at the elevator. He wrote to the employee's supervisor, with a copy to the Plant Manager, and recommended disciplinary action. He does not know if any disciplinary action was taken. Mr. Thiessen was not made aware of any other entries without a permit or testing. In fact, on one occasion, James Friesen, who was doing the testing, contacted him because the oxygen level did not show high enough on his test. Mr. Thiessen confirmed that the equipment was not working.

It appears that there was, for the most part, compliance with the requirement for testing and for obtaining a permit, although there were certainly numerous instances where permits were not properly filled out. It also appears that permits were being filled out without being initiated by the supervisor. All workers involved had been made aware of the need for a permit and for testing prior to any confined space entry. It is obvious that James Friesen, at least, was very aware, having contacted Mr. Thiessen previously when the oxygen level did not read as being high enough.

SAFETY EQUIPMENT

It is unclear what safety equipment was required for confined space entry at the time of the accident. On one hand, the "Safety Equipment" "Fall Protection" sections previously quoted, referred to the need to wear "safety belts and safety lines" when entering railcars, and indicated that "each department is equipped with the proper harness and lines". On the other, the Confined Space Entry Permit did not specify what type of equipment was in fact required. It simply had a check-off box for whether or not equipment was required. A gas monitor would have been required, because of the requirement to ascertain and fill in the oxygen level. The Confined Space Entry Procedure document read only, in regards to safety equipment: "this may include a two-way radio, harness and rope, gas

monitoring equipment". A two-way radio was used by Randy Gerbrandt. There was no gas monitor used, although required. No retrieval devices were used, except in the rescue.

The minutes of the Safety Committee meeting of January 1996 read, in regards to refinery issues: "The safety harnesses need to be used when going in cars." "Action by Les". Les Martens was not present at the meeting and it is not known whether or not he was even aware of this entry. Although the minutes seem to indicate that harnesses were available and were to be used, something was obviously contemplated as having to be done before they were used. Whether or not this was purchase of the harnesses, making them available at the refinery, or a direction that they be used, is not known. No follow-up was indicated in subsequent minutes.

CHANGES SINCE THE ACCIDENT

As a result of the accident, a number of changes were made. The company decided that, because jurisdiction over the plant was in issue, it would follow the Canada Labour Code specifically. As a result, it did a Hazard Assessment on each type of confined space, and developed written Procedures for entry into each space, based on the individual Hazard Assessment. It also developed a specific permit for each different kind of confined space. In total there were approximately thirty Hazard Assessments done and different procedures outlined for entering each. The Hazard Assessments, Confined Space Entry Procedures and Permits were and are placed in a binder separate from the Safety Manual.

In order to complete these assessments, Mr. Thiessen was appointed as a qualified person under the Canada Labour Code. The company also looked at the provincial guidelines. Emergency procedures, in regards to confined space entry, were reviewed as well.

NEW PROCEDURES

The document entitled "Rail Car and Truck Tanker Entry Procedure" filed along with the Hazard Assessment for that confined space, provides for air testing only by one of four qualified testers. It provides for positioning of the tank car so that it is directly under a retrieval hoist. It also

requires that the person entering wear a personal oxygen alarm and a safety harness and lanyard. The watchman must be trained in first aid and CPR, have a two-way radio, and inform the Communications Operator when the entrant enters and exits the car. This procedure is unfortunately not included, nor are any of the confined space hazard assessments and procedures, in the Safety Manual. The procedure only calls for one watchman, although the Guidelines for Confined Entry Work recommend at least two stand-by workers in such a situation.

The present Safety Manual still contains some of the previous documents, which, when viewed alone, leave the reader unclear as to what safety equipment is required. For example, there is a document in the Manual entitled "Confined Space Entry – Vessel Entry Procedure" which has a general section with regard to procedure and equipment. It does refer the reader to the more specific procedure in the "blue binders" for the particular confined space and indicates where such binders are located. However, CanAmera should give consideration to incorporating everything into one manual and to making many copies available.

There is now a document entitled "Vessel Entry Communications and Emergency Procedures". It indicates that the watchman is to notify the boiler room operator of both entry and exit to the confined space. The boiler room operator is to ask a number of questions, including "has the vessel been tested?" and "do you have a permit?" The operator must be prepared to organize the rescue by contacting the ambulance, assigning someone to direct emergency vehicles, and preparing emergency equipment such as breathing apparatus or a winch. It appears that calling for outside help is the primary rescue strategy, although the staff is to be able to attempt to retrieve someone by means of a harness and line.

The current Safety Manual includes, under "New Employee Orientation Program", the phrase "any people returning from an absence from work of more than six weeks, must go through the new employee orientation". Both the employee and the person who performed the orientation are required to sign, indicating the list of topics, including permits to work in confined spaces, that have been covered. This improvement will ensure that someone in a similar position to David Schroeder, having been away on an extended leave, has a refresher course.

In regards to confined space entry, there is a procedure called "Vessel Entry Procedure When Tests Cannot Be Met" and a procedure follows whereby the Safety Coordinator must write a report to the Plant Manager as to whether or not there should be an exception. CanAmera should review this policy with the Workplace Safety and Health Division to determine whether entry without testing is ever justified.

Under the section entitled "Atmospheric Monitoring" – "Oxygen Deficiency," various reasons for oxygen deficiency are discussed, but there is no mention of nitrogen. Apparently nitrogen is used less often, as Best Foods is no longer a customer, but I am not satisfied that it is never used. CanAmera should inventory situations where nitrogen is still used, and ensure all possible warnings are given.

ENFORCEMENT

In regards to disciplinary or enforcement policy, under "normal penalty for a first time offence", for a violation of a "major safety rule", "suspension" is the normal penalty. For violation of a "minor safety rule", the normal penalty is a "written reprimand". For a breach of a confined space entry policy, the normal penalty would apparently be suspension for one day. There are now random checks done on workers to ensure that they are adhering to safety policies. These checks are done by the Safety Committee and, from time to time, by other employees. These changes are significant. Supervisory personnel should do such checks as a matter of routine.

OTHER CHANGES

There are now only three qualified air testers, the Safety Coordinator and two people he can assign. Following the accident, monitors were also updated and another tester replaced the Scott Alert. Air testing equipment is no longer available to the people at the refinery, but only to the appointed testers. All are positive changes.

These changes probably ensure that the supervisor must initiate the confined space entry. Also, the supervisor is to be on site and within call range. These changes are very important and should be impressed upon staff

at all levels. Tank cars are apparently now only very seldom washed. At present, confined space entries happen only during daytime hours – normal office working hours, by policy. Finally, all permits are now sent, upon completion, to the Plant Manager for inspection.

TRAINING SINCE THE ACCIDENT

Darren Penner took over as Safety Coordinator of CanAmera Foods, Altona location, and has been in that position since January 2001. The safety position occupies approximately 60% of his time. Mr. Penner had, at the time of the Inquest, taken at least one course on Adult Education, focussing on how various people learn differently and how it is sometimes helpful to demonstrate, show a video, or teach in different ways. Mr. Penner had also taken a course on job hazard analysis put on by the Manitoba Safety Council.

For the past two years Mr. Penner has taught employees a program entitled "Safe Start". The program identifies four mental states that can lead to critical errors in the workplace – they are "rushing", "frustration", "fatigue" and "complacency". These states can lead to critical errors such as "eyes not being on task", "mind not being on task", "being in the line of fire", or "losing balance, direction or grip". Posters are displayed in the plant, which remind workers of these mental states and errors, and which encourage them to think safely. This course is delivered in a classroom with a workbook, followed by a video and individual work in the workbook, then a return to a video and a wrap up, during which time workers give personal examples.

Mr. Penner is aware that learning disabilities, language barriers, and illiteracy affect some employee learning. Apparently some of the workers at CanAmera Foods do not have a strong command of the English language. Adjustments are therefore made, such as giving tests orally.

Mr. Penner put on a Confined Space and Lockout refresher course in the spring of 2001. He went over the safety manual on confined space procedure and, at the end, workers watched a video on confined space. Mr. Penner, in his teaching, also applies examples that are close to the hearts of the people he works with. For example, he will get them to discuss whether or not a seed bin is a confined space. Many of employees have

come from agricultural backgrounds, where they are used to working in seed bins, without any particular precautions. Therefore, using a seed bin as an example has proved to be a good way to promote interest, discussion, and hopefully, awareness.

The Inquest heard little about training being offered to supervisory or management employees, other than training taken by the Safety Coordinator. As counsel for the Workplace Safety and Health Division pointed out: "Training is …not an event restricted to employees. Supervisors must receive as much, if not more, training than the workers they will supervise". She suggested and I agree, that the training process should include:

(a) Training supervisors and other management personnel who will be responsible for ensuring compliance with the policies, practices and procedures, to ensure that they are familiar with and understand them. (This would of course involve having managerial and supervisory personnel gain a detailed knowledge of ***The Workplace Safety and Health Act*** and regulations and the Guidelines for Confined Entry Work.)

(b) Training employees who will be affected by these policies and practices in the use and application of these policies and practices to the workplace.

(c) Ongoing training - this will include ensuring that new employees are trained on the policies, practices and procedures at the time they are introduced to the workplace. This will also include training existing employees in new policies, practices and procedures as they are introduced, and training employees new to an area or equipment after a transfer occurs in the workplace.

(d) Reinforcement of training - This requires an ongoing program to ensure that employees are reminded of the policies, practices and procedures and participate in the review of them on a routine basis. This should include both simple safety reminders at meetings and formal re-training or refreshers as appropriate. How frequently a particular policy, practice or procedure is reviewed with employees will depend upon the degree of risk, the complexity of the activity and the frequency with which the employee performs the activity.

> In the case of higher risk complex activities very frequent review is required.

It is difficult to know how much training is "enough" and whether or not it is sufficient for a company of CanAmera's size to have a part-time Safety Coordinator. However, I agree with the position of Counsel for the Division, that the topic of Confined Space Entry deserves its own training session. During that session the various hazard assessments and procedures for confined space entry can be reviewed, and workers can put on the harnesses and lines, practice entering various confined spaces and use the personal oxygen monitors. Rescues using the hoists can also be simulated. If this type of training cannot be done with the time presently available to the Safety Coordinator, he should be given more time for that purpose.

For the purpose of education, I suggest that CanAmera make available to employees copies of at least the most relevant sections of this Report.

RESCUES

Prior to the accident there were a number of rescue procedures set out in the Safety Manual, however, none of them dealt with confined space rescues. Bill Dixon, worker co-chair of the Safety Committee, expressed the need for such a confined space rescue procedure or drill. However, there was neither policy, nor procedure, nor any drill. Following the accident, changes were made in the Manual that included specific emergency procedures. Procedures were set out for responding to different types of emergencies, such as confined space and medical emergencies requiring extrication. If it is not already doing so, CanAmera should hold regular drills to practice what is to be done in various types of confined space emergencies.

Prior to the accident there had been some contact with the Altona Emergency Services and an attempt had been made to familiarize members with the plant, the types of equipment in the plant, and types of fires that may occur in the plant. There had been a paper exercise, with the Town of Altona looking at what could be done in a mock fire at the Altona location of the plant. The Altona Emergency Services had a site map of the

Altona plant. There was a practice in place whereby emergency vehicles would always come down Tenth Avenue, the main street dissecting the plant, and then CanAmera employees would direct them to the emergency.

After the accident, Mr. Thiessen met with the Altona Emergency Services in a training session, indicating what hazards were prevalent or possible in the plant. The members were given a tour. An offer was made to the Altona Emergency Services to allow them to do training in the plant, such as in confined space entry and high level rescue. As of the time of the Inquest, they had not yet chosen to conduct such training. CanAmera should again request that this take place.

In the rescue procedure that was developed after the accident, the policy reads that, at the time of any confined space rescue, emergency responders must be made aware of the hazard assessment regarding that confined space. This is important and could be done as part of the training, as well as in a real emergency.

Under the "Emergency Measures Plan" there is still a reference to people who are trained to use the self-contained breathing apparatus. This equipment is kept in the area outside the boiler room, but I am not sure what purpose it serves. We heard during the site tour that the company was planning on purchasing a portable compressed air machine with an airline. This would seem to be appropriate, provided guidelines are set for its use. Escape air might also serve a useful function, if it was only to be used in appropriate situations. CanAmera should review the purposes and proper use of each type of equipment, and then outline those in its Safety Manual.

The "Emergency Measures Plan – Refinery Emergency Procedures – Medical Emergency Requiring High Angle/Confined Space Rescue" reads:

(1) do not enter any confined space to rescue someone; only the fire department is qualified.
(2) follow all confined space entry procedures.

My understanding is that the staff would attempt to do the rescue from outside the confined space, using retrieval equipment, but once Altona Emergency Services arrived, its personnel would take over. This approach is sensible. However, in light of the minimum amount of time it

takes for Altona Emergency Services to respond, CanAmera may wish to re-evaluate its position and consider whether or nor it should develop and train a rescue squad or squads to take control, at least until emergency personnel arrive. If that occurs, this squad should be clear as to what it can and cannot do, and should have regular drills.

SAFETY COMMITTEES

Section 40 of ***The Workplace Safety and Health Act*** reads, "every employer shall cause a Workplace Safety and Health Committee to be established. The Committee shall consist of between four and twelve persons, at least one-half representing workers and one-half connected to management. Worker members are to be elected by the workers where no union exists". Duties of the committee are set out in subsection 40(7). There was such a committee in place at the time of the accident. Minutes were made and posted, inspections were conducted and concerns were raised. Some of the concerns were relevant to this Inquest. Until April 1996, there was no requirement that the matters previously raised, be put on a list for follow-up, or that this follow-up be monitored. This now occurs, which is a significant improvement. There is also, as of August 9, 2002, legislation, which requires a response by management to Committee recommendations within thirty days, also a significant amendment. There was apparently, at some point after the accident, some difficulty in obtaining a worker co-chair. However, presently there is a worker co-chair. The management members of the Committee rotate through the managers that are employed by the plant. Items raised are then referred to a manager's safety meeting to be dealt with.

Prior to the Inquest, there had never been an inspection of the Altona plant by provincial Workplace Safety and Health officials. One was scheduled for early May 2002 and by now has hopefully been completed.

CONCLUSIONS

Material Circumstances of the Deaths

Why did the workers enter an unsafe confined space?

On November 21, 1996, the tank car in question was a confined space, under either the present provincial or federal definition. I conclude that none of the three workers appreciated that entering into the tank car meant that they would be unconscious within five to ten seconds. The effect of "a sudden and severe" deprivation of oxygen on the brain cells is, in my opinion, the single most important piece of information to come out during this Inquest. If any of the three men who entered the tank car had appreciated that fact, I do not believe I would be writing this report. The men simply would not have entered the car; in the case of David Schroeder, or in the case of James and Peter Friesen, without taking precautions to ensure that they too did not collapse almost immediately upon entering. A "sudden and severe" deprivation of oxygen will lead to unconsciousness in five to ten seconds, permanent brain injury within two minutes and death within five to six minutes.

Education regarding these facts, leading to a true appreciation of the danger involved, will, in my opinion, go a long way toward preventing similar deaths in the future.

Even without an appreciation of the danger, however, David Schroeder would not have entered the tank car if, firstly there had been a clearer understanding as to when downspouts were to be removed, and secondly if he had followed the policy and procedure set out at the time by CanAmera Foods. The procedure set out in the company's Safety Manual, and taught to all four of the workers involved, required, prior to a confined space entry into a tank car, a permit and air testing. The permit was to have been initiated, or at least signed by, a supervisor, prior to entry. In all likelihood a supervisor would not have signed a permit in this case. It was not the policy for a fallen downspout to be removed until a tank car had been filled with regular salad oil and sent out on at least one trip, thus displacing the nitrogen in the car. Even if a permit were filled out, as it appears was not unusual at the time, without a supervisor's signature, attention would have been paid to the issue of air testing. If air testing had been done as required,

testing would have shown that there was almost no oxygen in the tank car, and no entry would have been made.

Why then did David Schroeder enter the tank car without a permit and without testing?

Without any evidence from Mr. Schroeder, the best evidence I have is from Randy Gerbrandt. His evidence was that, although both he and Mr. Schroeder were aware of the fact that the car was filled with nitrogen, and aware of company policy, they "forgot" about getting a permit and doing air testing. Given that neither had been involved in many confined space entries, at least documented ones, over the last year – Randy Gerbrandt (2) and David Schroeder (0), this was not a normal task for them and perhaps the policies were not well fixed in their minds. David Schroeder had been on leave for close to a year prior to returning at the end of June of 1996 – only five months prior to this incident. In addition, he was apparently excited about a planned trip to Las Vegas, which was to have occurred the next day.

The other possibility was that this was a deliberate flaunting of the rules while the supervisors were at lunch. However, although there was some suspicion that this was the case, there was no evidence to support such a conclusion. The evidence disclosed only one recent entry to a confined space, occurring without testing or a permit. That entry did not involve an employee from the refinery.

Why did James Friesen enter the tank car?

James Friesen may or may not have been aware that the car was filled with nitrogen. Over the noon hour preceding the entry, there had been some discussion about retrieving the pipe, which would have perhaps alerted those present that this was a car that had come from Best Foods and may therefore be filled with nitrogen. However, Henry Reimer did not remember this, although the conversation took place in the small room where Randy Gerbrandt, David Schroeder, James Friesen, and Henry Reimer had lunch. Therefore, James Friesen may also not have known that the car was filled with nitrogen. When David Schroeder was in the car and Randy Gerbrandt told James Friesen to go and help David Schroeder, it was Mr. Gerbrandt's opinion that David Schroeder had hurt his leg or something to that effect. Mr. Gerbrandt had not realized that the car did not have oxygen in it, and

therefore did not pass on this information to James Friesen. We know that James Friesen had, on a number of occasions in the past, tested tank cars for oxygen, and that he had on one occasion, when the oxygen level did not appear to be right, contacted the Safety Coordinator. Therefore, it does not appear that James Friesen would deliberately break company safety rules, except perhaps in an emergency, to save a fellow worker. I conclude that that is what happened.

Peter Friesen was aware that there was a problem with the atmosphere in the tank car when he attempted to save his brother James and Mr. Schroeder. He put on the self-contained breathing apparatus but could not fit through the manhole with it. He then decided to enter without the equipment and have it passed down to him. Neither he, nor the workers assisting him, appreciated how quickly he would become disoriented and then unconscious. I conclude that that is what happened and he collapsed before he could reach for the equipment. Or, in the words of Peter Friesen, in his submission at the end of the Inquest: "there is also a verse in the Bible that says, greater love has no one than this that he lays down his life for his friend… I believe that that is what Jim did and what I tried to do".

<u>Could lives have been saved once the men entered the tank car and collapsed</u>?

If a harness and retrieval line had been available, and David Schroeder had put it on, it would not have been necessary for James Friesen to enter the tank car. If the winch had been properly located beside the refinery, and the harness properly attached to the line, David Schroeder would have been removed while still alive and probably without suffering permanent brain damage. At the time of the accident, it was not normal procedure for harnesses and lines to be used for this type of entry. It is now. That is in my mind the most significant improvement made by CanAmera.

Without a harness and line already attached, the only way the men could be rescued was by someone else entering the confined space. Because there was almost no oxygen in the tank, the only way someone else could safely enter in time to save lives was with some type of oxygen supply. CanAmera Foods had, and has, two Scott air packs, a type of self-contained breathing apparatus. They are large and heavy and are located some distance away from the refinery. It takes approximately forty-five seconds to a minute to put the apparatus on. Could even a well-trained

rescue squad have rescued the men in time to save their lives? Given the time it would take to call for help, for the boiler room operator to call a rescue squad, and for the rescue squad to pick up air packs, get to the tank car, put on the air packs, descend into the car and put either a harness or some sort of rope onto the workers, it is still unlikely that lives could have been saved. It is even more unlikely that things could proceed perfectly, especially given the conditions rescuers would have had to work under: -20 C. temperatures, oil in the bottom of the tank and on the workers, and three men in need of rescue. David Schroeder and James Friesen would almost certainly both have suffered permanent brain damage, even if they had survived.

<u>What if such a situation was to occur again, and a worker or workers were to collapse in a tank car without harnesses and retrieval lines?</u>

There may be equipment available on the market that would allow a large quantity of breathable air to be quickly inserted into a confined space. However it is my understanding that such equipment is not likely to be portable enough to be usable quickly. If such equipment is not available, it may be barely possible for a well-trained rescue squad, composed of company workers, and equipped with either an air line or a smaller, self-contained breathing apparatus, to enter a tank car and save the people involved. However, it is not likely that such a squad could do so before the worker or workers suffered irreparable brain damage. This type of accident must be prevented from happening in the first place.

Peter Friesen would probably have died too had it not been for the actions of CanAmera Foods employees in providing him a source of oxygen. This was done by lowering the self-contained breathing apparatus to the area of his face and by putting compressed air and oxygen up through the bottom of the tank car. Mr. Friesen owes his life especially to Erv Hilliard and Ed Dueck, who thought to lower the self-contained breathing apparatus and who called for the oxygen tanks. In saying this, I am not disregarding the explosion risk inherent in enriched oxygen atmospheres, and thus am not advocating the use of pure oxygen in similar situations.

Probably not a factor in the deaths, was the communication that took place between Randy Gerbrandt and the boiler room operator. Mr. Gerbrandt was, it appears, so excited that he was unable to communicate the information as to what had happened, and the boiler room operator was not

able to solicit this information from him. Therefore, the information that was relayed to the Altona Emergency Services was to the effect that there was one person having an attack. This neither alerted them to dispatch more than one ambulance, nor to send self-contained breathing apparatus. I have concluded however that the deaths would have occurred at approximately 12:50 or 12:52 p.m., long before even the first ambulance arrived.

Altona Emergency Services is a volunteer organization and as a result relies on volunteer emergency responders. Those people have to be called at home or work and have to then report to the fire hall and attend accident scenes from there. It therefore took a number of minutes for the dispatcher to make the calls (approximately three) and then again a number of minutes for the personnel to attend to the fire hall (two to four), and then thirty seconds to a minute to attend to CanAmera Foods. Even if the information as to the exact problem had been communicated, it is my conclusion that there was not enough time available to save lives. We heard that there are now two ambulance drivers on duty at the Altona Hospital during the day (perhaps only on weekdays). This certainly will improve the response time. Even had the ambulance drivers been able to proceed immediately to the scene, they would not have had the self-contained breathing apparatus, as it was located back at the fire hall, stored on one of the fire trucks.

When dealing with oxygen deprivation, time is of such an essence that, even given an ideal situation it is, in my opinion, questionable whether or not any emergency response service, and especially a voluntary one, could arrive in time to save lives.

THE WITNESSES

(1) Peter Griffin

Mr. Griffin is a Certified Industrial Hygienist, certified by the American Board of Industrial Hygiene. The science of Industrial Hygiene involves the anticipation, recognition, evaluation and control of occupational health hazards. Mr. Griffin is the Manager of the Occupational Hygiene Unit with the provincial Department of Labour and Immigration, Workplace Safety and Health Division. Mr. Griffin gave expert opinion evidence in the area of Workplace Safety and Health, and specifically in the area of Industrial Hygiene. Neither Mr. Griffin nor anyone from his Division was involved in investigating the accident, as at the time, the federal authorities had assumed control of the investigation. However, prior to the Inquest and his initial report, Mr. Griffin had read the witness statements and the report prepared by Chief Glen Robinson of the Altona Police Service. After hearing that there may be further questions following the evidence, Mr. Griffin made himself available to hear the witnesses most relevant to the issues he was addressing, after which he wrote a further report and again testified. Mr. Griffin's assistance was invaluable and I have attached his reports as Appendices E and F to this report.

(2) Glen Robinson

Mr. Robinson is the Chief of the Altona Police Service. Mr. Robinson was appointed, pursuant to subsection 39(1) of ***The Fatalities Inquiries Act***, by the Chief Medical Examiner, to conduct an investigation into the accident. He also played a minor role at the scene. In his role as investigator, he interviewed CanAmera Foods employees as well as those of the Altona Emergency Services. He obtained photographs and other documentary evidence. Chief Robinson conducted an extremely thorough investigation and prepared a very helpful report.

(3) Ronald Stuart Braun

Mr. Braun is the present General Manager of CanAmera Foods, Altona Location, and has been for the past five years. Mr. Braun was not employed at the Altona plant on the date of the accident, but was able to provide a useful overview of plant operations, as well as testify about changes made at CanAmera Foods since he arrived. Mr. Braun also conducted a very helpful tour of the plant on April 23rd, 2002.

(4) Darren Wayne Penner

Mr. Penner was the Traffic Coordinator at CanAmera Foods at the time of the accident. He is presently the Health and Safety Coordinator, having been appointed to that position in January of 2001. He was able to testify as to recent changes in safety procedures and training.

(5) Lesley William Martens

Mr. Martens was and is the Refinery Manager at CanAmera Foods, Altona location.

(6) David Thiessen

At the time of the accident, Mr. Thiessen was both Safety Coordinator and Chemist at the Altona plant. He was instrumental in implementing and teaching safety procedures. Following the accident he revised the Safety Manual and completed Hazard Assessments , Entry Procedures and Permits for each confined space entered by plant workers.

(7) Jake Froese

Mr. Froese was and is the supervisor or “lead man” of the refinery at the Altona plant.

(8) Randal (Randy)Gerbrandt

Mr. Gerbrandt was employed by CanAmera Foods from January 18th, 1995 until he left to take other employment in April 1997. At the time of the accident he was a refinery operator. As the last person to speak to David Schroeder and James Friesen, his testimony was crucial.

(9) Henry Reimer

Mr. Reimer was, at the time of the accident, employed in the refinery at CanAmera Foods, doing packaging and some loading of tank cars and trucks. Also, with James Friesen, he on occasion washed tank cars. Mr. Reimer had lunch with Randy Gerbrandt, David Schroeder and James Friesen just before the accident. He was unloading another car in the immediate area of the accident and assisted in the rescue.

(10) Peter Hildebrand

Mr. Hildebrand was a supervisor in another department in a different area of the plant. Mr. Hildebrand was one of the first persons to attend at the scene and assisted with rescue efforts.

(11) Erdman (Ed) Dueck

Mr. Dueck is an operator in another part of the Altona plant. He also was one of the first on the scene and was described as a being a "very calm and cool" person in the efforts to get oxygen to Peter Friesen, steps which helped keep him alive.

(12) Ervin Hilliard

Mr. Hilliard was the Chief Engineer at CanAmera Foods in Altona and also a former volunteer fire fighter. He and Ed Dueck responded to the initial call for help with two sets of self-contained breathing apparatus. Mr. Hilliard took control of the rescue operation until Altona Emergency Services personnel arrived. He also adjusted and lowered self-contained breathing apparatus to the

area of Peter Friesen's mouth and nose, which probably kept Peter Friesen alive.

(13) Paul Jacob Freier

Mr. Freier is a power engineer. He was working in the boiler room at the time of the accident. Along with his other duties, he was the central communications person for the plant and received the emergency call from Randy Gerbrandt. He contacted Erv Hilliard and then placed telephone calls to the Altona Emergency Services.

(14) Eileen Janet Kehler

Ms. Kehler was the receptionist at the Altona Hospital and the person responsible for dispatching the ambulances. In that capacity she received the emergency calls from Paul Freier. As she recorded the times when the calls came in and when ambulances were dispatched, her testimony was very valuable in assisting me to ascertain accurate times.

(15) Alan Mart

Mr. Mart is a Captain with the volunteer Altona Emergency Services. Mr. Mart was, along with Wayne Bergen, first of the Emergency Services responders to arrive at CanAmera. As the senior member there at that time, he took control of the accident scene. Mr. Mart was also the first Emergency Services person into the tank car during the rescue operation and was instrumental in the removal of all three men.

(16) Wayne Bergen

Mr. Bergen is also a member of the Altona Emergency Services and was in the first ambulance to arrive on the scene.

(17) Robert Stoesz

At the time of the accident Mr. Stoesz was the Chief of the Altona Emergency Services. When he arrived at the scene, Mr. Stoesz took control of the physical area surrounding the accident scene.

RECOMMENDATIONS

If the policies in place at CanAmera Foods at the time of the accident had been followed, the accident would not have occurred. There were however, areas where improvements were called for, especially in the areas of supervision and required equipment. Many significant improvements have been made since the accident, and I commend CanAmera for those. There is still, as is probably the case with most employers, room for improvement, especially in the areas of employee education, supervision, and preparation for emergencies. A number of recommendations to further improve the safety of workers at CanAmera Foods have been incorporated informally into the body of this report. The recommendations that follow concern entities over which I have legislative jurisdiction to make formal recommendations - that is government departments and agencies.

I understand that an inspection of CanAmera Foods was to have been conducted in early May 2002. If for some reason this inspection has not been completed, I would hope that this happens as soon as possible. The Workplace Safety and Health Division can then work with CanAmera Foods to make those changes that the Division, with its expertise, believes are necessary. The Division can follow through by way of monitoring and enforcement, and by providing help and guidance, to ensure that recommendations deemed to be essential to worker safety are complied with.

Therefore, I recommend:

(1) That if they have not already done so, Workplace Safety and Health Inspectors attend at CanAmera Foods facilities to conduct and complete a safety inspection.

(2) Given the jurisdictional issues that arose between the federal and provincial authorities after this accident, that the provincial Department of Labour, in liaison with the federal government if necessary, take steps to inventory the work sites in the province where safety enforcement is a matter of federal jurisdiction, as well as those where the jurisdictional mandate is unclear, with a view to resolving any current situations analogous to CanAmera Foods. It should then be made clear to employers and employees at those locations which

government, federal or provincial, enforces their workplace safety procedures.

(3) That the Provincial Government move to pass a regulation in regards to confined space entry. Such a regulation would allow for enforcement, as it would be a statutory instrument. It would also make it very clear to employers and employees what requirements exist for confined space entry. The definition of confined space should be made certain, so that there is no ambiguity as to whether all, or only some, of the criteria need be present. In this regard, assistance can perhaps be gained from the definition of confined space in the federal regulation. There should also be certainty, for example, in regards to whether retrieval systems are required in every situation, and where more than one watch person is required at the entry to the confined space.

(4) That the Workplace Health and Safety Division:

(i) strive to have frequent inspections of all workplaces where confined space entries occur, and where this is not possible, attempt to monitor compliance and provide guidance, by having employers submit in writing such documents as Hazard Assessments, Confined Space Entry Procedures and Training Programs. The Division should especially ensure that all employers, who have employees undertaking confined space entry work: follow the Confined Space Entry Guidelines or a subsequent regulation, fulfil their duties under section 4 and especially paragraph 4(2)(a) of ***The Workplace Safety and Health Act,*** which is attached as Appendix I, provide air monitoring equipment, harnesses, line and hoists, and ensure their employees use that equipment;

(ii) if feasible, again provide courses on confined space entry.

(iii) contemplate the practicality of producing or commissioning a “made in Manitoba”, modern version of a training video tape, along the lines of “Only Fools Rush In”. “Only Fools Rush In” is a rather dated, somewhat dry, but extremely relevant American video on the topic of accidents resulting from confined space entries where safety procedures are not followed (produced by Industrial Training

Corporation, 1983, and presently available through the Workplace Safety and Health Division library);

(iv) ensure that employers have properly trained employees, who may be involved in confined space entry, on safety procedures to be followed, and develop and implement a program to review and test the quality of the training that is provided;

(v) ensure that employers have confined space emergency procedures in place and that they have trained workers or teams in regard to those procedures;

(vi) approve stop work orders and if necessary, ultimately charge, for safety breaches in confined space entry situations;

(vii) distribute relevant portions of this report to industries and employee groups to whom it may be relevant.

(5) That the provincial Departments of Labour and Health assist rural emergency service providers to inventory the existence of any industrial operations within their geographic catchment areas that may present especially dangerous or challenging rescue operations, and to work with those locations to identify equipment needs and rescue plans.

(6) I endorse a number of recommendations made in the Report prepared by Professor Wally Fox-Decent and the Review Committee to Improve Workplace Safety and Health in the Province of Manitoba. Those that are relevant here are as follows:

(i) that the Workplace Safety and Health Division and Workers Compensation Board encourage the development of industry specific, environmentally sound, safety and health training by industry associations, employers, unions, and private consultants;

(ii) that the Workplace Safety and Health Division develop training programs in safety and health issues that are targeted for supervisory staff.

(iii) that the Workplace Safety and Health Division train external trainers to deliver Division training programs where demand warrants; and

(iv) that the Workplace Safety and Health Division and the Workers Compensation Board, together with other stakeholders, develop and make available to the public an inventory of available safety and health training programs and trainers.

(7) The Government of Manitoba has recently passed ***The Safer Workplaces Act,*** amending ***The Workplace Safety and Health Act.*** I endorse a number of amendments that are relevant to this Inquest, and recommend that the Government take the steps necessary to fully implement them. Specifically, I endorse amendments that require that:

(i) employers must "ensure that all of the employer's workers are supervised by a person who (a) is competent, because of knowledge, training or experience, to ensure that work is performed in a safe manner, and (b) is familiar with (***The Workplace Safety and Health)*** Act and the regulations that apply to the work performed at the workplace;"

(ii) "Every employer shall provide information, instruction and training to a worker to ensure, so far as is reasonably practicable, the safety and health of the worker before the worker begins performing a work activity at a workplace;"

(iii) a workplace safety and health program must include "(a) identification of existing and potential dangers to workers in the workplace and the measures that will be taken to reduce, eliminate or control those dangers, including procedures to be followed in an emergency; (b) the identification of internal and external resources, including personnel and equipment, that may be required to respond to an emergency at the workplace; and… (k) a procedure for reviewing and revising the workplace safety and health program at intervals not less than three years or sooner if circumstances at a workplace change in a way that poses a risk to the safety or health of workers at the workplace;"

(iv) "The employer shall design the workplace safety and health program in consultation with the committee for the workplace;" and

(v) "The employer shall make a workplace safety and health program available to the following persons on request;… (d) a safety and health officer."

Also, the Act provides that:

"The Lieutenant Governor in Council may make regulations (a) respecting standards and practices to be established and maintained by employers, supervisors, …to protect the safety and health of any person at a workplace; (b) respecting procedures, measures and precautions that are required, or prohibited, when performing any work activity."

RECOMMENDATIONS RE: ALTONA EMERGENCY SERVICES

(8) Altona Emergency Services is obviously a highly disciplined and well-trained organization, perhaps surprisingly so, given that it is solely composed of volunteers. As with any volunteer emergency service, there is obviously a period of time required to contact volunteers at home or at work and for them to attend to the fire hall. That means that response time, even at best, may be too long where there is an oxygen deprivation situation. There are now apparently two drivers on duty at the Altona hospital during the day and the ambulance is based there. That will certainly lead to an improvement of response time, at least for the initial ambulance. Given however, that the self-contained breathing apparatus belonging to the Altona Emergency Service was, at least at the time of the accident, stored in one of the fire trucks at the fire hall, it would not be available in the initial ambulance.

I therefore recommend that consideration be given to carrying self-contained breathing apparatus or other air supply in the first response ambulance.

(9) In regards to other types of confined space rescues and industrial emergencies generally, given that there are a number of major

industries in the Town of Altona, it would be of assistance if the Altona Emergency Services, and in other towns similar emergency services, meet with the local industries and coordinate rescue plans. The emergency services should be made aware of the site, confined spaces, and hazards at each industry. Equipment should also be coordinated so that if the emergency personnel are to use the company's equipment, the equipment is properly maintained and emergency services personnel are trained in its use.

The Province, in terms of its regulatory function in terms of training of ambulance attendants, as well as defining the required equipment and ambulances, may also have a role in implementing these recommendations.

(10) In terms of training, I would encourage the Department of the Fire Commissioner to continue to provide confined space entry training, at least until such time as the Workplace Safety and Health Division provides such a course.

Finally, I would urge the Provincial Government to amend ***The Victim's Bill of Rights*** or ***The Fatality Inquiries Act*** to provide some services to families who are participating in an inquest. Although attendance at inquests is obviously traumatic to family members involved, presently there are no supports or services provided by legislation.

APPENDICES

A The Fatality Inquiries Act, Section 33.

B Site plan of Altona plant of CanAmera Foods.

C Map of the Town of Altona.

D Guidelines for Confined Entry Work.

E Letter to Sean Brennan dated March 18, 2002 from Peter Griffin, Manager, Occupational Hygiene Unit, Workplace Safety and Health Division, Department of Labour.

F Letter to Sean Brennan dated April 9, 2002 from Peter Griffin, Manager, Occupational Hygiene Unit, Workplace Safety and Health Division, Department of Labour.

G CanAmera Foods Altona Location Confined Space Entry Permit.

H The Safer Workplaces Act, Sections 40, 41.

I The Workplace Safety and Health Act, Section 4.

EXHIBIT LIST

Exhibit 1 - Blue binder.

Tab 1 –
Report of Medical Examiner, re: Dave Schroeder, December 11, 1996 (1 page).
Autopsy Report Form, re: Dave Schroeder, January 9, 1997 (4 pages).
Forensic Laboratory Report, re: Dave Schroeder, April 29, 1997 (2 pages).

Tab 2 –
Report of Medical Examiner, re: James Friesen, December 11, 1996 (1 page).
Autopsy Report Form, re: James Friesen, January 14, 1997 (4 pages).
Forensic Laboratory Report, re: James Friesen, April 29, 1997 (2 pages).

Tab 3 –
Report of Glen Robinson, Chief of Police, Altona Police Service.

Tab 4 –
Transcribed Statement of Peter Friesen, December 2, 1996 (4 pages).

Tab 5 –
Transcribed Statement of Russ Toews, November 25, 1996 (9 pages)
Handwritten notes of Russ Toews (1 page).

Tab 6 –
Transcribed Statement of James Stoesz, November 25, 1996 (7 pages).
Handwritten Notes of James Stoesz, November 21, 1996 (2 pages).

Tab 7 –
Transcribed Statement of Shawn Tarnick (7 pages).
Handwritten Notes of Shawn Tarnick (1 page).

Tab 8 –
Transcribed Statement of Travis Hildebrand (6 pages).

Tab 9 –
Transcribed Statement of Cornelius Peters, November 25, 1996 (7 pages).
Handwritten Notes of Cornelius Peters (2 pages).

Tab 10 –
Transcribed Statement of Tyler Pelke, November 25, 1996 (11 pages).
Handwritten Notes of Tyler Pelke (1 page)

Tab 11 –
Transcribed Statement of Barry Thiessen, November 25, 1996 (6 pages).

Tab 12 –
Transcribed Statement of Daryl Rempel, November 25, 1996 (7 pages).

Tab 13 –
Transcribed Statement of Roger Gillis, November 28, 1996 (4 pages).

Tab 14 –
CanAmera Foods, Altona Location Confined Space Entry Permit (1 page).

Tab 15 –
CanAmera Foods, Confined Space Entry Policy (2 pages).

Tab 16 –
23 Photographs (8 pages)

a) Full Length of Rail Car CGTX23274, clay rail car in background of picture (enlarged)
b) CGTX23274 in line with other rail cars on CanAmera property (enlarged).
c) CGTX23274 close up of winch, dome, and covered manhole (enlarged).
d) Close up of placard on side of CGTX23274 indicating nitrogen atmosphere (enlarged).
e) Close up of side of CGTX23274 showing air lines used in rescue attempt (enlarged).
f) Close up of end of CGTX23274 showing air lines used in rescue attempt (enlarged).
g) CGTX23274 with steps to catwalk (enlarged).
h) CGTX23274 in profile in lineup of rail cars on CanAmera site (enlarged).
i) End view of rail cars on CanAmera property (enlarged).
j) Building to be identified with reference to site map (enlarged).
k) Close up of CGTX23274 showing winch, dome and uncovered manhole (enlarged).
l) Close up of CGTX23274 showing winch, dome and covered manhole (enlarged).

m) View inside CGTX23274 showing downspout and hard hats (enlarged).
n) View inside CGTX23274 showing downspout and glove (enlarged).
o) Diameter of manhole of CGTX23274 (enlarged).
p) Catwalk (enlarged).
q) Scott Air-Packs used at CanAmera at time of Accident (enlarged).
r) Bottom bung of CGTX23274 that air was put through (enlarged).
s) Refinery building with adjacent rail cars (enlarged).
t) David Schroeder in Hospital.
u) Close up of David Schroeder in Hospital.
v) Jim Friesen in hospital.
w) Close up of Jim Friesen in Hospital.

Tab 17 –
CanAmera Foods, Safety Talk, Sign in Sheet, May 11, 1995 (1 page).

Tab 18 –
CanAmera Foods, Safety Talk, Sign in Sheet, May 18, 1995 (1 page).

Tab 19 –
CanAmera Foods, Notice of Safety Training, Mary 14, 1996 (1 page).

Tab 20 –
CanAmera Foods, Good Manufacturing Practices (3 pages).

Tab 21 –
CanAmera Foods Memo, re: Use of Scott Air Pack, June 21, 1995 (1 page).

Tab 22 –
RCMP Toxicology Report, re: James Friesen, December 9, 1996 (1 page).

Tab 23 –
RCMP Toxicology Report, re: David Schroeder, December 9, 1996 (1 page).

Tab 24 –
Report of Earl Bonito, Human Resources Development Canada (44 pages).

Tab 25 –
Report of Peter Griffin, Workplace Safety and Health (5 pages).
Manitoba Workplace Safety and Health Guidelines for Confined Entry Work (27 pages).

Tab 26 –
CanAmera Foods Ltd. Altona Location Site Plan.

Tab 27 –
Map of Altona.

Tab 28 –
CanAmera Operations Synopsis.

Tab 29 – CanAmera Foods Altona Division Safety Manual
(a) Original 1994 version (51 pages)
(b) First update 1995 in force at the time of the accident (31 pages)
(c) 1997 revision (36 pages)

Tab 30 –
Current CanAmera Safety Manual (59 pages)

Tab 31 –
Factory Design Sketch of rail car.

Tab 32 –
Weekly Safety Reports of Dave Thiessen (3 pages)

Exhibit 2 - Black binder – Report of Glen Robinson, Chief of Police, Altona Police Service.

Exhibit 3 - Seven cassettes – recorded witness statements.

Exhibit 4 - Metal rail car seals (regular).

Exhibit 5 - Metal rail car seals (cable-type)

Exhibit 6 - Orange placard.

Exhibit 7 - List of training courses for Darren Penner, Health and Safety Coordinator.

Exhibit 8 - Confined space entry permits (4).

Exhibit 9 - Calibration Manual for Scott Alert Models 101, 103 and 105.

Exhibit 10 - Hazardous Occurrence Investigation Reports – 3 – dated November 21, 1996, signed by David Thiessen Safety Coordinator.

Exhibit 11 - CanAmera Foods, Altona, Hazard Assessments, Confined Space Entry Procedures and Permits.

Exhibit 12 - CanAmera Foods, Altona location – Confined Space Entry Permits 1996 to date of accident.

Exhibit 13 - November 1996 Altona, Mb. – Environment Canada Weather Report (2 pages).

Exhibit 14 - Confined Space Entry Seminar Manual produced by Levitt – Safety Limited 1994.

Exhibit 15 - Altona Hospital Fire/Ambulance Dispatch Forms (2) dated November 21, 1996.

Exhibit 16 - Workplace Safety and Health Committee Minutes (14 pages).

Exhibit 17 - Review Committee on Improving Workplace Safety and Health – Wally Fox-Decent – Chair
Excerpts from Report of January 27, 2002.