

Early cases of sickness caused by computers

by *Gunni Nordström*

Eight secretaries at a Swedish company got sick in 1989 when new computers were installed. One secretary became permanently disabled. The story involves radiation and chemical fumes, a botched attempt at creating a low radiation computer screen and a ten-year court battle.

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If something is wrong in the work environment it is natural that several people have problems at the same time. The scientists call it a cluster. When such a cluster cannot be explained with the old well-known methods and diagnosis, then the problem is commonly considered a statistical anomaly, or caused by mass hysteria, and shelved.

This is especially the case when the affected people are women. That is how it has been when strange clusters were reported among female screen workers in Sweden and in other countries. [In the early days it was mostly women who spent a lot of time in front of computer screens. Ed.] It has especially been that way when many women on a job site complained about skin irritation and other acute symptoms when using the screens. The same happened with the high rate of miscarriages among women working in the American chip industry, where the companies refused to see a connection with the toxic chemicals they used.

Many Swedish workplaces were quick to measure the electromagnetic fields when there were acute symptoms, but nobody apparently measured the chemical gases coming from the electronics – at least not with any advanced methods. Perhaps the manufacturers did when even their own employees complained.

There wasn't any measurement of the chemical emissions when eight secretaries got sick while working for VBB VIAK in Gothenburg, Sweden. In 1989 they got various levels of symptoms at the same time the company installed new JVC Telenova GDH 3214 computers on their desks.

They didn't know to offgas ("burn in") the equipment before it was installed in the offices, i.e. to let them sit in a well-ventilated room for a couple of weeks while turned on. This removes much of the fumes.

The occupational health and safety organization looked into the matter and reported that after the employees had gone through training and had used the computers for a few weeks they complained about itching, prickling sensations, redness in the face and on the lower arms.

The air quality in the offices was routinely checked and deemed “poor.” According to the report, created by the occupational health clinic in Örebro, the symptoms were similar to sick building syndrome. This was not surprising since when the company moved into the building eight years earlier, in 1981, it was brand new and several of the 120 employees complained of skin and eye symptoms. In an occupational health report from 1992 it was noted that several employees had problems with nosebleeds.

When the eight secretaries got their new computers something exceptional happened. Something in the new electronics, electromagnetic fields or chemicals, individually or acting together, was apparently the drop that made the cup run over. Today we know that alternating electrical fields play a role in how gases and particles gather, both indoors and outdoors. Presumably the combination of the computer and where they were placed provided an unfortunate combination.

The office building was located on Gullbergsvass road, just a few steps from the busy six-lane Mårten Krakowleden, which carried heavy traffic to and from the big ferry boats to Denmark and Germany. It was also close to the central railway station and the ASG trucking terminal. The outdoor air pollution surely affected the indoor air quality at VBB VIAK, together with the emissions from the electronics and other things inside. In the basement of the building was a transformer station and the ground floor housed a print shop.

Britt-Marie Rosell had worked for the company for 25 years and was the executive assistant. She became one of the two most heavily affected. Very soon after the JVC Telenova equipment was installed, she could feel a burning sensation on her face and chest, which later on also spread to her legs and feet. She also developed sore muscles and joints as well as flu-like symptoms with watery eyes and irritated airways. Her skin felt like she'd been laying out too long in the sun. She didn't make the connection to the new equipment for a while.

She had several pieces of equipment around her desk when the symptoms started. There was a Rank Xerox 850-10 with a diskette station down by her feet. There was a Sperry computer terminal connected to a mainframe in Stockholm and the new Telenova/JVC system. There was also an old IBM electric typewriter, two fluorescent lights and three telephones in her room, which was about ten square

meters (a hundred square feet). Two laser printers were in the hallway just outside her room, with their output of ozone and other emissions. Her desk and chair had legs of steel.

Three high-voltage feeder cables entered the building in the basement below her office and six more entered further away.

“My machine sometimes flipped out and had trouble starting up. Presumably I was charged up myself, since I frequently got electric shocks. We got an antistatic mat for my chair. When the computer was sent out to be checked, they found nothing wrong with it,” said Britt-Marie Rosell.

“It was obvious something in the building affected both the computer and myself.”

That is a relevant observation as it is a known fact that electronic equipment can disturb each other and even react to the electrical “disturbances” [dirty electricity] that are on today’s electrical wiring.

The company was concerned about what happened to the eight secretaries. It was understood that something had to be done. It was decided to remove the new computers and go back to the old equipment. Later on, they installed monochrome Eizo screens with Sunflex filters.

These screens were not offgassed before they were placed on people’s desks, though they were an improvement for all the eight secretaries. However, the most affected were still not symptom free.

Britt-Marie Rosell moved around the building to follow her boss when he changed office. One of her offices was right below a work room where people soldered electronic circuit boards, a process we now know emits a slew of chemicals, including isocyanates.

New computer equipment was installed throughout the building, both personal computers and mainframe terminals. There was constantly new equipment offgassing into the indoor air.

Britt-Marie Rosell’s eyes became blurry and more sensitive to light. She had dizzy spells and increasing muscle soreness. The symptoms used to disappear when she got home, but after a while the recovery period got longer. The burning sensation on her skin seemed to go deeper.

Her hairdresser noted that the skin on one side of her head was red and irritated. It could not be her shampoo, since it was just on the right side. Britt-Marie realized she had a fluorescent lamp on her right side and she now kept it close to her since her eyesight had gotten worse. (Even today the skin on that part of her scalp is sensitive and bleeds easily. When she in 1998 had cancer cells removed from the skin near her nose, she asked the dermatologist to check her scalp, but nothing alarming was found there.)

Her symptoms continued to get worse and by 1992 she had to completely stop working. She was then 49 years old. Two years later she was awarded a permanent disability pension.

But her work injury was never accepted. The authorities denied that she had been injured by the radiation from the screens. Electrical sensitivity was not an accepted diagnosis. This diagnosis was also not accepted by the doctor who helped Britt-Marie Rosell get her disability. He had simply listed her disabling symptoms.

When she informed the disability agency that she had also been exposed to chemical fumes from all the electronics, she was met with the attitude that when we were discussing electromagnetic radiation then we could not also discuss chemicals.

Britt-Marie didn't know whether to laugh or cry over the self-contradicting authorities. On one hand, they would not accept a diagnosis of electrical sensitivity, on the other they refused to discuss anything else.

VBB VIAK was not a mean employer. When so many employees got sick it was natural for them to call in the experts to investigate the cause, but nobody considered the chemical fumes, even though the new electronic equipment could be smelled around the building.

There was a public debate about the electromagnetic radiation in Sweden and the company hired Yngve Hamnerius, a scientist at Chalmers Technical University in Gothenburg, to do some measurements. He recorded elevated magnetic and electrical fields around the building. He found especially high electric fields around the Telenova/JVC screens. Britt-Marie included his report with her disability application two years later. The report stated:

To be sure that the unusually high fields from the Telenova/JVC screens were not an artefact, four screens were measured. The results were the same. I have an identical screen at Chalmers and it

measured the same. It is disturbing that the readings are so high despite the screen is designed with a steel shield inside the plastic cabinet. I took apart my own screen to find out the reason for these high fields and discovered that there were coils embedded in the front to counteract the magnetic fields and these coils were a major source of the electric fields. I shielded these coils and the electric field was reduced from 85 V/m to 40 V/m. This is still high, though half of the original level. That one of the sources is mounted in the frame means that a filter, such as Sun-Flex Security, won't shield it.

The technicians Martin Andersson and Lars Erik Eriksson at Liberel in Skellefteå also checked the Telenova/JVC screens and noted that it radiated 8 to 18 times the low-frequency limit in the TCO 92/95 recommendations. They also documented that the screen emitted about sixty other frequencies, all the way up into the megahertz range. The screen emitted radio-frequencies corresponding to about seventy transmitters. "The level from each transmitter exceeds the normal background level by 10 to 100.000 times," they wrote.

This was not the only time Martin Andersson ran into problems with this particular model. He had been hired to investigate several other companies where employees had gotten sick from these screens.

Oddly enough, this screen had been advertised as the first low-radiation multisync color screen. The brochures quickly disappeared when the company received stories about people getting sick at several offices around the country.

Britt-Marie Rosell was very sick for a long time, while she was sent from doctor to doctor. She was already in 1989 sent to a neurologist because of her dizziness. He expressed surprise that he had just seen another patient with the same symptoms and the same occupation.

A pulmonary specialist noted her swollen mucous membranes and reduced lung function. Something made her windpipe swell and gave her a persistent cough, but nobody associated chemical exposures with an office setting [sick building syndrome was publicly debated in the United States at this time but not in Sweden, Ed]. This was even the case when Britt-Marie told the doctors she had trouble breathing and that it "felt like the lungs were burning," which is a common symptom for people exposed to chemicals such as isocyanates. It was also a common complaint from people made sick by computer screens.

Even today, her airways are the first to be affected when there is something in the air she doesn't tolerate.

Her right cheek went numb and it is still chronically numb. Specialists have no explanation.

She wondered if dental work with a steel pin and amalgam fillings could interact with the electromagnetic fields to create a galvanic battery. She knew about a Swedish study showing that electromagnetic fields could increase mercury leaking from amalgam fillings and she had her fillings removed, but that made her worse.

Sore muscles and joints were a constant part of her symptoms. Various diagnoses were tested, but none were supported by lab work.

By January 1992, her physician wrote her up as full-time sick. She was by then sick in bed with strong pains and shortness of breath. She could not move on her own. Her husband and child brought her food every morning before they went to work and school.

At the end of February, she got in contact with doctor Bo Nilsson in Uddevalla, who prescribed vitamins, minerals and B-12 injections. Slowly she became a little better, but she was not healed.

Besides her chronic sensitivity to fluorescent lights and other electronics, she partially lost her sense of smell.

Like so many others in this situation, the disability agency forced her to go to a psychiatrist. The psychiatrist wrote the agency that she was a strong, intelligent and lucid woman without any signs of depression or anxiety, but that she unfortunately had all the signs of the controversial illness of electrical sensitivity. He said it was impossible to find her a suitable workplace in the modern world full of electronic equipment.

Britt-Marie's application for worker's compensation was rejected by the agency, the local court and the appeals court. She had to present her case herself at the appeals court since her two unions would not pay for a lawyer. Despite presenting three expert witnesses, including a physician, the appeals court rejected her case. The appeals court simply cited a recent 1994 pilot case and was not interested in what additional information Britt-Marie presented about the chemicals. The court was split three to two, with the two lay judges supporting her case.

She refused to give up and appealed to yet a higher court. Her union hired an independent attorney, Kenneth Lewis, because none of their own attorneys

believed the case could be won, since they had lost the 1994 pilot case. The pilot case had taken two years.

Kenneth Lewis pointed out that this case was different and the chemical aspect had been ignored without reason. He thought that her symptoms were for what in the United States was called multiple chemical sensitivity.

Also, the case should be tried under the pre-1993 law that was less stringent. It stipulated that if more evidence supported the case than was against, then the case should be approved. The law was based on probabilities rather than proof. The sick person should not be made to suffer for scientific uncertainty. But court practice had already become stringent even before the new law took effect.

The first step in such a case was to prove that something in the work environment was dangerous. There was no precedent regarding chemical emissions from computer equipment and the court refused to hear the case. This decision was made in March 1999, by a single person, which is unusual. He did not present any explanation. Later on, he stated that Britt-Marie's case, according to the first case, was entirely about electrical sensitivities and that she had added more complaints later on. She pointed out to him that she already in 1993 had filed a separate complaint based on the chemical exposures, but it had been ignored by the courts. But Mr. Rundqvist stood by his refusal to let the higher court hear the case.

Translator's notes

The computer technology has changed dramatically since 1989. The computer screens back then were all of the cathode ray tube (CRT) type, which used an electron gun to shoot electrons onto the back side of a glass plate covered with phosphorus. These screens were bulky, had high electric and magnetic fields, and used a lot of electricity. They created a lot of heat so chemicals inside their cabinets offgassed rapidly. This technology was dominant until about 2002.

The above story is a translated excerpt from the book *Mörkläggning: Elektronikens rättslösa offer* (loosely translated: Hidden by Darkness – Victims without legal rights in the electronic age). It was published in Sweden in 2000 by Gunni Nordström who, as a journalist, covered the electrical sensitivity controversy in Sweden from the very start. Nordström is also the author of the English-language book *The Invisible Disease*.

This translation is permitted by Gunni Nordström and Britt-Marie Rosell.

More MCS and EHS history

See www.eiwellspring.org/history.html for more articles about MCS history, and www.eiwellspring.org/ehshistory.html for EHS history.

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