Courtesy WorkSafe NZ

BRAKE PRESS SENSOR OVERRIDE

Summary

The operator of a press brake had his hand crushed in the machine, which cycled after he had disabled the sensor beam.

CONTEXT

- The small manufacturing business had owned the brake press for 25 years.
- S was one of two employees permitted to operate it.
- He had been trained on the machine more than ten years earlier.
- The press was often used to make flashing from sheet metal.
- A sensor beam disengaged the press if it was interrupted by a hand or other object.
- The sensor could be disabled by the operator using a key on a control panel.

DETAIL

- S put a piece of sheet metal into the die and pressed the foot pedal.
- His arm interrupted the sensor beam, causing the metal to jam.
- He used the key to disable the sensor.
- He picked up the flashing, turned it over and put it back in the press.
- He operated the pedal but was still holding the metal with his right hand.
- His hand was crushed in the press.
- In hospital, the tips of two fingers had to be amputated.
- He returned to work after four months.

BACKGROUND

- The brake press and its sensor beam did not comply with the AS/NZS 4024 machinery standard.
- Supervisors knew operators regularly disabled the sensor beam to change the die or clear jams.
- No risk assessment had been carried out on the brake press.
- There was no written procedure for the operation of the press.
- S felt several things in the business were unsafe but deferred to the authority of his supervisors and said nothing.

LESSONS

- Use of a sensor override should be strictly controlled by a responsible person.
- It should only be used for specific tasks such as set-up.
- When a machine is used in override mode a highly visible indicator such as a red flashing strobe light should be used.
- Every machine needs to be formally risk assessed and a documented safe system of work created for it, including clearing jams, re-setting, and maintenance.
- Every business needs to create a culturally appropriate safe pathway for staff to raise H&S concerns.

MACHINERY RISK ASSESSMENT

Assessing the risk of machinery is complex. ***HAMISH BAKER*** *says the assessor needs to be competent, willing to involve the operators, and able to clearly communicate outcomes to senior stakeholders.*

This mechanical press brake accident might seem like an unusual or unfortunate event, but these are high risk machines which have caused many serious injuries around the world. In response, detailed legal instruments specifically related to mechanical power presses/press brakes have been implemented, such as the Approved Code of Practice L112 – *Safe use of power presses* in the UK, and Code of Federal Regulations (CFR) 1910.217 in the United States. In the UK they go further, with additional guidance documents covering daily inspection and testing and maintenance programmes! WorkSafe NZ has its own Factsheet (WKS-6).

Many of these mechanical power presses and press brakes of a similar vintage (in this case older than 25 years) are likely to be in operation around New Zealand. The construction of these machines is such that safeguarding them to a standard consistent with the benchmark standard AS/NZS 4024.2014 is challenging and unlikely to have been carried out, so significant risk is likely to be present across the country's workshops.

Of those who have carried out risk assessments of their press brake machines, I suspect that only the most expert assessors have applied a due diligence approach to establish the relevant information from all sources (like those listed above).

GETTING OPERATOR BUY-IN

These documents are also technical, so engineering competence is required – not only to understand them but to be able to propose reasonably practicable safeguarding solutions, which is an important step in any risk assessment. But as complex and risky as press brakes are, many other machines present similar challenges. It is for this reason that the competence of your plant risk assessors is key to make sure you don't miss anything, produce a suitable and sufficient risk assessment, and ultimately achieve safe plant.

Equally important as management understanding of risk is the involvement of operations and maintenance personnel, not only in the risk assessment but in developing solutions. The people working at the machine must understand what the risk is, why the controls are in place, and why they must immediately report issues with the controls to the management. When the people who operate the machine do not understand a control – or do not agree with it – they are more likely to bypass guards and administrative controls. Expert assessors are skilled at getting buy-in and putting in place processes to monitor the effectiveness of the controls.

RISK COMMUNICATION

The challenge for many small and medium businesses is understanding what level of risk warrants such an investment into engineering-based controls over cheaper administrative controls (such as the safety override key procedures).

To save cost, there may be a temptation to believe that procedural controls are robust, but they are always less effective than engineering controls; at best, they could be used to complement effective engineering safeguards.

Understanding the risk is essential. Regardless of organisation size, communicating the residual risks to senior management for informed decision making is essential. How many chief executives or directors would be happy knowing they rely on a procedure for controlling the use of a safety override key? Especially if they knew the key controlled the only safeguard, that the hazard could cause finger/hand amputation, and that the override needed to be activated frequently during production?

It is essential that whoever does your risk assessments can communicate these facts effectively to senior management to allow informed decision making.

Even if your organisation has engaged an external expert to carry out risk assessments on your machinery, has engaged well with stakeholders, and decisions have been well communicated – it is still essential that you regularly review the risk assessments. The assumptions used may no longer apply, the controls may not be as effective. Don't let that guarding report from your expert sit on the shelf until the next accident. Risk assessment is not a once-and-done exercise.

IN SUMMARY

- It starts with risk assessment – the foundation of a safe workplace.
- Don't underestimate the complexity of machine risk assessment and the competence that is required. It is essential your risk assessment team is competent.
- Risk assessment is a team activity to increase safety, not a compliance review.
- Effective communication of your risks to your decision makers, officers and directors is required for informed decision making and change.
- Risk assessment is not a once-and-done exercise. Ongoing review is part of the process. ■

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