EDITORIAL NOTE: CHANGES MADE TO THIS JUDGMENT APPEAR IN [SQUARE BRACKETS].

SUPPRESSION ORDER EXISTS IN RELATION TO ASPECTS OF THIS JUDGMENT PURSUANT TO S 205 CRIMINAL PROCEDURE ACT 2011: SEE PARAGRAPH [96] HEREIN AND SEE - http://www.legislation.govt.nz/act/public/2011/0081/latest/DLM3360354.html

IN THE DISTRICT COURT
AT INVERCARGILL

I TE KŌTI-Ā-ROHE
KI WAIHŌPAI

CRI-2018-025-001802
[2019] NZDC 5675

WORKSAFE NEW ZEALAND
Prosecutor

v

WALLACE MURRAY ELECTRICAL LIMITED
Defendant

Hearing:	26 February 2019
Appearances:	N Self for the Prosecution E Keeble and R E Cole for the Defendant
Judgment:	29 March 2019

JUDGMENT OF JUDGE J J BRANDTS-GIESEN
[AS TO SENTENCE]

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[1] The defendant, Wallace Murray Electrical Limited ("the company") has pleaded guilty to a charge of failing to take all practicable steps as a PCBU to ensure the safety of its workers, including [the victim], while at work, namely, that it failed to ensure he was not exposed to the risk of death or serious injury while undertaking switchboard installation work, contrary to sections 36(2)(a), 48(1), and 48(2)(c) of the Health and Safety at Work Act 2015 ("the Act").

[2] The company pleaded guilty at the first available opportunity. The maximum penalty is a fine of $1.5 million.

Background

[3] The company is defined under the Act as a PCBU, which offers specialist electrical services and maintenance. It is based in Southland and was formed in 1958 by the current director's father. The company is the maintenance provider, inter alia, for the Invercargill City Council's Three Waters Project, which includes drinking water, stormwater, and sewerage.

[4] The company has held the contract for approximately five years. The contract includes all electrical and engineering services for the project's installation, including the Waikiwi Pumping Station at Myers Reserve.

[5] [The victim] in this matter, is a qualified electrician with approximately 10 years' experience, three of which have been working for the company. He commenced work on the project a few weeks before the incident. A second employee of the company, with limited registration, was on site assisting [the victim] in the upgrade.

[6] This particular job involved the upgrade of the main controls and communication systems for the pump station. Work commenced on the upgrade in June 2017. It involved the installation of a new switchboard mounted on the rear wall behind the existing main switchboard. The planned transition was to supply electricity to the new switchboard, as well as the old switchboard, and progressively transfer the service from the old to the new.

[7] Cables carrying the electrical supply to the old switchboard ran via a trench in the concrete floor of the north end of the switchboard, which led to a transformer on the outside of the building. The transformer is an 11 kilowatt, 400 volt three-phase transformer, fed by an overhead powerline into the site.

[8] The supply cable between the transformer and the main switch of the existing switchboard had no low-voltage isolation device. This meant that although the main

switch could be turned off to isolate the power to the switchboard, turning the switch off did not isolate power to the incoming side of the main switch.

[9] The only means to completely isolate the supply of electricity to the incoming side of the main switch was to isolate the electrical supply to the transformer outside the building. This required the high voltage fuses to be opened on the power pole that feeds the transformer. That would require the local power authority to remove the high voltage fuses.

[10] At the back of the main switch in the existing switchboard, the cables from the transformer are attached to heavy copper connectors which pass through a vertical insultation panel into the bottom of the back of the main switch cradle on the incoming side of the switch.

[11] On the front of the insulation wall the cradle for the main switch had the power coming in on the incoming side at the bottom of the back of the switch cradle, and the power going out ("the outgoing side") at the top of the back of the switch cradle.

[12] The outgoing side of the switch is fed to the switchboard via three copper bars ("bus bars") which protruded out from the back of the switch cradle into the switchboard. These bus bars are not accessible from the rear of the switchboard, protected as they are by a vertical insulation panel, but they are accessible from the front, above the main switch.

[13] As part of the transition to the new switchboard, the company decided to source the power for the new switchboard from the bus bars on the outgoing side of the main switch on the old switchboard. This required drilling holes in the copper bus bars on the outgoing side, to bolt the cable joiners onto, which in turn required the power to be isolated.

[14] On 31 October 2017, [the victim] contacted the off-site control room to request that the pump equipment be turned off, so he could turn the main switchboard off. Once the signal had come through from the control room for the pump equipment, [the victim] switched off the main switch on the old switchboard. Each of the bus bars

were tested by [the victim], using a multi meter, to ensure that no power was present on the secondary (outgoing) side of the main switch.

[15] [The victim] attempted to drill a 10 mm hole in one of the copper bus bars, but then decided to drill pilot holes in each bus bar with a small drill, and work up to the size he required for the bolts. Having drilled a small 4.5 mm hole in each of the bus bars, he progressed to a larger drill bit (7 mm) and began drilling out the holes.

[16] To drill the holes, [the victim] positioned himself in front of the main switch, crouching on one knee and reaching into the switchboard, facing forward over the main switch.

[17] At approximately 11 minutes after starting, and while drilling into one of the copper bus bars, [the victim] was exposed to an electrical explosion, and subsequent fire from behind the main switch.

[18] The arc flash/explosion caused partial thickness burns to both of [the victim]'s hands and fingers. The arcing is also said to have affected his face. He was admitted to Southland Hospital but was discharged later that day, and has no longterm effects from these injuries.

Risk

[19] Working with electricity presents significant risks, including the occurrence of an arc flash, which may result in workers' sustaining serious burns or death.

[20] The risk of exposure to arc flash was high, given the close proximity to live components while the work was being undertaken. The work created the potential for metal swarf generated in the drilling process to fall onto energised conductors, causing an electrical short between conductors, or between the conductor and earth.

[21] An uncontrollable release of energy (arc flash) can occur when a conductive material makes contact directly between exposed conductor bars, or between the exposed conductive part and an earthed metallic framework.

[22] The electricity industry has detailed regulations and controls which must be put in place to prevent exposure to live electricity, to prevent significant serious injury or death.

[23] Those regulations include the Electricity Safety Regulation 2010, in particular regulation 101, and also the standards set out in AS/NZS 4836:2011 entitled 'Safe working on or near low-voltage electrical installation and equipment'.

[24] WorkSafe conducted an investigation and identified a number of shortcomings in the work of the company. The investigation determined that:

(a) The most probable cause of the incident was copper swarf, generated by the drilling process, falling on the live terminals;

(b) The victim was a tradesman experienced with undertaking work on switchboards, and while the company had inducted [the victim], the company did not have safe work procedures, other than "toolbox meetings" which were held from time to time, but not as frequently as they should have been;

(c) While there were a number of meetings and technical discussions between the company and representatives of the Invercargill City Council before the work was undertaken and before a method for doing the work was settled on, the company had conveyed to the Council that a complete shutdown would not be necessary for the work to be undertaken;

(d) The victim was not wearing protective gloves, and mats were not used to isolate the live components with respect to the incoming bus bars; and

(e) On inspection after the accident, a length of copper swarf was found below the holes that had been drilled.

[25] To eliminate these failures, the prosecution says it was reasonably practicable for the company -

a) To have identified the site specific risks to the switchboard upgrade;

b) To have completed an assessment of the risks relating to working near energised conductors, and to have implemented appropriate controls;

c) To have provided, maintained, implemented and monitored a safe system of work;

d) To have ensured the switchboard was isolated/de-energised prior to the work commencing; and

e) To have ensured safe working procedures, including use of gloves and insulating matting to cover any live components if it was not reasonably practicable to de-energise them.

[26] As a result of the company's failure, [the victim] suffered serious injury.

Previous history

[27] The defendant has been totally cooperative with WorkSafe and has not previously appeared before the court.

Victim impact

[28] The victim impact statement was read in court by [the victim].

[29] It is to be noted that immediately upon his release from hospital, he went back to the accident site to ensure that everything was safe. While he had two weeks off work, he said that the company continued to pay his full wage, and were very

supportive of him during his convalescence. He returned to full duties at the end of two weeks, and suffers no lasting effects from the incident.

[30] The prosecution submitted that [the victim]'s face was injured by the arcing. [The victim] said that that was not so. I therefore do not take any facial burns into consideration as a feature exacerbating his injuries.

[31] [The victim] said in his victim impact statement that the company had paid $8000 to him, that he considered that was a generous emotional harm payment, and that he did not seek any more.

Restorative justice

[32] [The victim] declined restorative justice, as both he and the company had worked together closely with respect to the matters which gave rise to the accident and as to his convalescence. In effect, restorative justice had taken place, albeit informally.

[33] I do take into account, however, when assessing culpability, that the company was willing to be involved in restorative justice.

Four-stage approach to sentencing

[34] Sentencing in cases such as the one facing the company involves a four-stage enquiry, as confirmed in *Stumpmaster v WorkSafe New Zealand:* [1]

(a) I need to assess the amount of reparation payable to the victim.

(b) I need to fix the amount of the fine by reference to the four guideline bands which were confirmed in *Stumpmaster* and then have regard to the aggravating and mitigating factors.

[1] *Stumpmaster v WorkSafe New Zealand* [2018] NZHC 2190.

(c) I need to determine what further orders under section s 152 to 158 of the Act are required. In this case, only costs are sought and no other orders are required.

(d) I need to make an overall assessment of the proportionality and appropriateness of imposing the sanctions that I determine under (a) to (c) above.

Amount of reparation payable

[35] In this case, the defendant company has paid [the victim] $8000 as an emotional harm payment. The company has also covered the shortfall between [the victim]'s ACC entitlement and his usual wages. No additional payment is sought by the victim, and I consider the amount already paid is appropriate in the circumstances. I particularly note that that payment was made in a timely way. The court should respect the wishes of a victim unless there is suspicion or evidence that the victim has been persuaded by an employer to reduce his claim.

Amount of fine payable

[36] I need to consider what fine is appropriate.

Prosecution position

[37] The prosecution refers me to *Stumpmaster v WorkSafe New Zealand* [2] and its acceptance of the well-known list of relevant factors set out in the guideline judgment *Department of Labour v Hanham & Philp Contractors Limited.* [3]

[38] First, the identification of the operative acts or omissions at issue, and the practicable steps it was reasonable for the offender to have taken in terms of s 22 of the Act.

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[2] *Stumpmaster v WorkSafe New Zealand* [2018] NZHC 2020.
[3] *Department of Labour v Hanham & Philp Contractors Limited* (2009) 9 NZELC 93,095 (HC), (2008) 6 NZELR 79.

[39] The prosecution refers to five main matters which the company failed to take reasonably practical steps to avoid. They are:

(a) To identify the site-specific risks relating to the switchboard;

(b) To complete an assessment of the risks relating to work near energised conductors, and to implement appropriate controls;

(c) To provide, maintain, implement, and monitor a safe system of work;

(d) To ensure the switchboard was isolated (de-energised) before the work commenced; and

(e) To ensure that a safe work procedure included a requirement to use insulating matting to cover any live components.

[40] WorkSafe says that the risk of arc-flashing is well known, and is specifically referred to as a "hazard" in standard AS/NZS 4836:2011. It says that the only way to completely isolate the electricity would have required the local power authority to remove the high voltage fuses on the power pole, which would have required a shutdown of the pumping station and the loss of a water supply to the significant part of Invercargill City served by the pumping station.

[41] WorkSafe says that methods "lower down the hierarchy of controls" could have been implemented, such as using an insulating matting to cover live components, and ensuring that gloves were worn by workers as personal protective equipment. WorkSafe says that arc flash can cause serious burns or death.

[42] WorkSafe says that there was a risk of a potential for illness, injury, or death because [the victim] was in close proximity to the live components. WorkSafe submits that risk of death or serious injury could reasonably have been expected and, furthermore, the company departed significantly from industry standards.

[43] The prosecution therefore considers that a starting point of $600,000 is appropriate, and refers to what it considers are similar cases.

[44] It is to be noted that *WorkSafe v Dimac Contractors Limited* involved a digger striking a power pole, causing a pole to collapse, and two employees were put at serious risk, although neither was harmed.[4] In that case, it was found that death could have resulted.

[45] In *WorkSafe v North Power Limited* the victim sustained deep burns.[5] There had not been a site-specific risk assessment, and the site had not been de-energised for the duration of the work.

[46] Other cases quoted are less useful, because the maximum penalties had not yet been modified.

[47] The prosecutor says that in the present case, there is a higher culpability than in *North Power,* thus putting it at the cusp of the medium and high bands of culpability. This is because the company did not develop or implement a safe work procedure, whereas the work plan in *North Power* had included hazard controls, such as requiring insulating rubber mats, and an alternative plan to do the work de-energised.

[48] Here, submits the prosecution, the defence has said, in a Duty Holder Interview, that it relied on the regulations themselves, rather than creating the safe work procedures required by the regulations.

[49] The company in the instant case had conveyed to a representative of the City Council that a complete shutdown would be required for the work to be undertaken, but, in fact, it was not.

[50] No aggravating features have been identified by the prosecution.

[51] Mitigating features include that the company has no previous convictions for this type of offending; reparation has been paid; there has been cooperation with the investigation; and there is remorse, illustrated by the payments made to [the victim] to cover the shortfall between ACC compensation and lost wages.

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[4] *WorkSafe v Dimac Contractors Limited* [2017] NZDC 26648.
[5] *WorkSafe v North Power Limited* [2017] NZDC 17527.

[52] The prosecution considers there should be no discount for remedial steps taken, because any remedial steps do not meet the threshold of "going the extra mile".

[53] It is acknowledged that there should be a discount of 25 percent for the guilty plea.

[54] In relation to ancillary costs to the regulator, only $1225.69 in costs is sought.

[55] A reparation figure of $10,000 to $12,000 is regarded as appropriate by the prosecutor, together with a fine of $360,000, i.e. allowing five percent for every one of the mitigating factors, and a 25 percent discount for a plea of guilty.

Defence position

[56] The defendant agrees in principle with the four stage approach, and the four bands adopted in *Stumpmaster*.

[57] The defence considers that the starting point for the fine should be $250,000, in contrast to the $600,000 promoted by the prosectuion.

[58] The defence submits that the company has taken significant remedial steps following the incident, at a cost of $138,174.71.

[59] The defence disagrees with the prosecutor's assessment of how culpability ought to be determined, and says that with a 25 percent reduction for factors in mitigation, the fine would be reduced to $187,500, and from that should be deducted a further 25 percent for a prompt guilty plea, i.e. $140,625.

[60] The defence emphasises that this is a small company, with 19 fulltime workers, many of whom have worked for the company for over 30 years. It emphasises that [the victim] is a qualified electrician of 10 years' standing, and with some three years' employment with the company.

[61] [The victim] was accompanied by [the victim's assistant], who had a limited electrical registration at the time of the incident. The defence emphasises that [the

assistant] was not at risk at any stage, because he was observing the work from a distance.

[62] Prior to attending the site, [the victim] had discussed the work with one of the directors, and they had discussed the methodology to be used and the best way to mitigate the hazards, which included a complete shutdown which would have resulted in Invercargill having only two hours of water supply before the pump station would be needed to be operational again. That was deemed to place undue time stress on the company's workers, thus increasing the chances of an accident. The use of a generator as a substitute power source would have created unsafe levels of noise for the workers for an extended period of time. As a result, the company director and [the victim] decided that a short power outage and parallel switchboards was the most reasonably practicable option.

[63] Once at the pump station, [the victim] assessed the job and discussed it with [the assistant]. Vacuuming was carried out before starting any work, thus minimising the risk of swarf, although not totally eliminating that risk because swarf could gather in inaccessible places.

[64] The supply cable between the transformer and the main switch had no low-voltage isolation switch for fusing, because of the age of the building. Modern switchboards must contain a low-voltage isolation device, but with this one – where such a device was not operative – there was a risk of an arc flash, but it was assessed by [the victim] of being a low risk, indeed extremely unlikely.

[65] The defence says that as there was only a small gap below [the victim]'s hands out of which any arc flash could escape, there was no real risk of death to [the victim]. As for [the assistant], he was at a distance and there was no risk at all.

[66] The defence submits that the risk of an arc flash was not obvious, even though it was considered by [the victim] as a possibility, and the only risk of totally eliminating that would have been a shutdown, which could have put significant parts of Invercargill at risk (e.g. in the event of a fire, and the general domestic needs of Invercargill citizens).

[67] The company, and indeed [the victim], considered that insulating safety matting would have restricted [the victim]'s ability to do his work, and there was no requirement to wear gloves.

[68] The submission also covers the points raised in the victim impact statement that the company was totally supportive of [the victim] when this incident occurred.

[69] The defence submits there is no evidence produced to support the proposition that the arcing was likely to have been caused by a piece of copper swarf. It also says the conductors were not exposed or event visible, as was alleged by the prosecution.

[70] The company and [the victim] had undertaken a hazard assessment of the site to commence work, but did not identify the risk of an unknown object creating an arc flash. The company reasonably believed that the switchboard was fully isolated and posed no risk, even though it accepts that the risk to [the victim] was increased due to the age of the switchboard. It says that insulating matting would have reduced the ability of [the victim] to do his work, and that [the victim] was not exposed to risk of exposure to live electricity. He had kept a distance of 530 mm from live conductors, as required by the standard. Gloves were not required, and all associated and personal protective equipment was maintained and safe to use.

[71] The company accepts that it did not adequately enforce or monitor its health and safety policy, or implement satisfactory processes to manage risk at the time of the incident, and that the company has had "a wake up call".

[72] The defence criticises the prosecution for failing to give credit for the preliminary meeting which [the victim] had had, and for the thoroughness with which that had been conducted, and his further "plan of attack" with [the assistant], and that [the victim] had followed a safe work procedure.

[73] The defence emphasised the company's good record, its conscientious approach to the investigation by WorkSafe, the cooperation given, and its re-invigorated engagement with the health and safety requirements by engaging a consulting firm to review and ensure its health and safety requirements are being met.

[74] The defence considers the reparation paid previously by way of emotional harm payment was appropriate.

[75] Overall, the defence disputes the level of culpability and starting point adopted by the prosecution, and gives illustrations of cases where the injuries were significantly greater.

[76] The company submits that the appropriate band of culpability is at the lower end of the medium level set out in *Stumpmaster*. It prays in aid nine factors which it considers supports that proposition, they being:

a) A risk assessment had been carried out by the company;

b) All power sources were identified and there was no perceived risk as there was physically no chance of an arc flash;

c) The defendant carried out the above work in excess of all required distances;

d) The hazard of the arc flash was not reasonably foreseeable;

e) It is accepted that insulation matting was not provided, but [the victim] had all other relevant personal protective equipment, and the only gap through which anything untoward could happen was a very narrow one;

f) It accepts that the training and health and safety procedures did not constitute a complete safe system of work;

g) [The victim] suffered injuries of a relatively modest nature, compared with other cases;

h) There was full cooperation with WorkSafe; and

i) There has been a formal and significant improvement to health and safety matters, at very considerable cost to the defendant company,

> which previously had a completely incident-free record. What the company has done in that regard is detailed in an annexure to its submissions, to demonstrate that the remedial steps have cost the company a little under $140,000.

[77] The company therefore submits that its culpability is at the lower end of the medium culpability band, and an appropriate starting point for the fine is $250,000.

My assessment as to fine

[78] In order to determine an appropriate starting point for the fine, I need to assess the company's level of culpability. I acknowledge the points raised by the prosecution and referred to in paragraph [39] above.

[79] There was an attempt to identify the risks and prepare a work plan. As has often been the case in small companies, such assessments are not committed to writing, and, here, were possibly too informal.

[80] So too with safe systems of work. [The victim] expressed the view that insulating matting might have made his work more difficult to do, as it would have obstructed his vision.

[81] I consider that the prosecution's view that death might have resulted, as being without a technically supported foundation.

[82] I agree with both counsel that the defendant's level of culpability fits firmly into band 2, as determined by *Stumpmaster*. I consider that an appropriate starting point is lower than that proposed by the prosecution, but higher than that suggested by the defence.

[83] I find that the prosecution has failed to give appropriate credit for the preparatory work that has been done by the company before it commenced work on this particular task, and the prosecution has also significantly under-estimated the remedial work that has been undertaken by the company. The first was aimed at reducing risk, even though it did not entirely eliminate risk. The second is

well-recognised as showing a commitment by the company to avoiding problems like this in the future.

[84] The court can take some comfort from the company's good record, its cooperation with the investigation process, and its commitment to risk reduction, education, and the like.

[85] However, I do note that there appears to be some substance to the criticism by the prosecution that the company had indicated a need to close down the electricity supply (and thus a water supply for a significant part of Invercargill), but had then resiled from that approach. I can understand that a Council would wish a water supply to be interrupted for a minimum period of time for many safety reasons in the city (e.g. fire, and the need for fresh water) and that pressure on ending an interruption could create unnecessary pressures for tradesmen such as [the victim and his assistant], and thus replace one risk with another. However, that whole issue could have been handled more professionally.

[86] I adopt as a starting point a figure of $300,000. I allow 25 percent for mitigating factors, and a further 25 percent for an early guilty plea. That comes to a figure of $168,750.

[87] While I have not been supplied with evidence of the company's finances, I am entitled to take into consideration that this company is a small to medium business enterprise. Any fine over a figure of $100,000 will impact on the company to a sufficient level to act as a disincentive to inadequate work practices.

[88] This is in contrast to a very large business, where fines are often treated as a "cost of doing business." Where the shareholders actually work in a business and manage it, fines hit them directly, whereas that does not always apply when senior management members are not shareholders.

[89] That this company has no previous convictions is an indication that it is not only financial considerations which drive its quest for general excellence, even if in

this case it has fallen short. The reputation of a small firm is easily lost, and loss of patronage and contracts often follow.

[90] I therefore stand back from it and reduce the fine to $150,000.

[91] As to reparation, I note that [the victim] accepts that the reparation he has received is adequate. It may well be that the court might have imposed a slightly higher figure, to provide some consistency with other cases. However, the court should respect the wishes of a victim in coming to an appropriate level of reparation.

Further orders under the Act

[92] As to costs there is, and can be, no dispute that the amount sought is eminently reasonable and consistent with other cases.

Proportionality

[93] As to proportionality, I am required to consider whether the total amount that I have ordered – namely the proposed fine of $150,000, plus costs of $1225.69, plus reparation (already paid of $8000) – is too high.

[94] I consider that the amount that I have awarded by way of fine and costs are appropriate in the circumstances, and I will not adjust it further.

Result

[95] The overall result is as follows:

(a) The company is fined $150,000 and is ordered to pay costs of $1225.69.

(b) The fine is payable by equal monthly instalments spread over a period of two years, commencing 1 May 2019. In the absence of financial details, I consider that to be a reasonable period of time.

(c) I make no further order as to reparation, as I consider that an adequate amount ($8000) has already been paid to [the victim].

ADDENDUM:

[96] It has been brought to my attention (on 8 April 2019) that this judgment did not deal with the interim order for suppression of name which exists in relation to the victim [the victim], and also to [his assistant]. I make a final order suppressing their names, on the grounds that publication may cause undue hardship to the victim, and to [his assistant].

J J Brandts-Giesen
District Court Judge