



New Zealand Fire Service

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15 September 2015

Mr Doug Watt
Manager Market Monitoring
Electricity Authority

By email: Doug.Watt@ea.govt.nz

Dear Doug

Penrose Substation Fire – 5 October 2014

This letter responds to your letter of 20 August 2015 seeking information from the New Zealand Fire Service (**the Fire Service**) about the Penrose Substation Fire (**the Fire**). The Electricity Authority is carrying out an inquiry into the Fire, and is seeking any information from the Fire Service that may assist Transpower, Vector or other lines services to learn from this event. Specifically, you asked the Fire Service to address two questions, which are addressed below.

In addition to the Fire Investigation Report provided to Transpower, has the Fire Service undertaken any other investigations into the Fire.

If other investigations have been carried out, please provide a brief description of them and a summary of any findings and recommendations.

Cause and origin fire investigation report

The Fire Service carried out an investigation into the cause and origin of the Fire. The purpose of this report was to establish the cause and origin of the Fire, rather than the operational response to the Fire. I understand you have a copy of this report. If not, please let me know and I will forward a copy to you.

Post-incident debrief

On Monday 10 October 2014, the Fire Service also carried out an incident debrief. This was not an investigation. This was an internal debrief with the crews that attended the Fire. This is standard practice after an incident that has involved an alarm make up requiring extra resources to be responded to deal with an event, or is unusual or of significance.

The Fire Service does not have a formal report documenting this debrief, but meeting minutes. A summary and explanation of comments in those minutes that may assist Transpower and Vector (as well as the Fire Service in terms of its interactions with those or other similar entities) to learn from this incident is set out below.

www.fire.org.nz

The Fire Service did not initiate a fire attack until advised power was off and isolated by an electricity agency representative on site.

A foam delivery was initiated and then withdrawn due to uncertainty that power was actually off and isolated. Delivery of that foam showed clear indications that power was still a hazard in some areas.

The Fire Service was advised by an electricity agency representative on site that they could not be 100% sure that power was off to the affected area.

Firefighters were then ordered to withdraw from the area.

The fire was located in a service trench that was filled with cables. The transformers and cables utilized a common oil supply as a cooling agent. The oil that jacketed the cables had ignited. This caused the free flow of burning oil along the trench.

Electricity agency representatives on site were concerned about fire spread to a building in close proximity. This was because it contained important switching equipment and computers, which if lost, would mean power would be out for weeks, possibly months. The initial foam attack stopped the fire from spreading to this building.

The Fire Service experienced problems knowing who to ask for advice, as there was more than one electricity agency taking responsibility for the site in attendance (i.e. both Transpower and Vector). Conflicting advice from different representatives at various levels, within each organization caused confusion in identifying if extinguishing options could be performed safely.

Operational Readiness review

For completeness I also note the Fire Service carried out a review on the effectiveness of the relevant Fire Service Region and Area business continuity plans and fire station emergency plans during this incident. While of use to the Fire Service for planning purposes, this report does not appear to be relevant to the Electricity Authority's inquiry.

Comment

In accordance with Instructions issued by the National Commander under section 27A of the Fire Service Act 1975, the Fire Service will not commence firefighting operations involving electrical hazards at substations until a representative from the relevant electricity agency certifies that it is safe to do so.

While the Fire Service may have a site and tactical action plan for a particular site, it will always refer to the knowledge of an on site representative deployed to the incident by the relevant electricity agency for confirmation that power is off and safe, and the nature of any hazards on site.

In this case, there was confusion amongst Fire Service staff as to whether the attendees from Vector or Transpower held the information the Fire Service needed to safely commence its fire attack.

The Fire Service takes the view that there should be on-going communication and dialogue between the electricity agencies and the Fire Service in respect of communication, planning, co-ordination for fires involving electrical substations, in particular where multiple electricity agencies are involved.

Yours sincerely



Rob Pope
Director, Office of the Chief Executive

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