

Councillor Cheryl Buggy
Chair of Scrutiny Management Panel
Customer, Community & Democratic
Services
Civic Offices
Guildhall Square
Portsmouth
PO1 2AL

Inveralmond House
200 Dunkeld Road
PERTH
PH1 3AQ

Telephone: 01738 456292
Facsimile: 01738 455211

Our Reference: ab/140510
Your Reference: AQ/CB/SMP290710

Date 23 August 2010

Dear Cheryl,

Re: Power outage Portsmouth Saturday 26 June 2010

Thank you for your letter of 2 August addressed to our Chief Executive and passed to me to respond. The power outage that affected Portsmouth on Saturday 26th June 2010 was a very unfortunate but thankfully infrequent event from all of our perspectives and we are pleased to be able to help you with your investigations. Our answers to the specific questions you ask are noted below.

- *What caused the power failure?*

The power outage was caused by a fault on a 33kV current transformer attached to one of our main 33kV circuit breakers feeding the city. An initial fault on this equipment caused a fire within the circuit breaker which resulted in a second fault that eventually led to a fire affecting the whole 33kV switch board.

- *In what way was this incident preventable?*

Unfortunately the fire destroyed much of the evidence that we require to ascertain what the initial problem was. As the first fire was within the circuit breaker it would be impractical to address this directly and by the time it caused the second fault there was little we or the Fire Services could do. We have a number of monitors and protection systems that check our equipment in our substations. This equipment worked correctly in this case and ordinarily would have limited the damage with no customers losing supply. Unfortunately in this case, and very unusually, a fire started that led to more damage and more loss of supply than is usually the case.

- *What assurances can Scottish & Southern Energy give to Portsmouth residents of the action they are taking to support the resilience of the electricity supply for Portsmouth?*

The electricity supplies to the residents of Portsmouth and its adjoining areas are taken from our main substation at Warblington Street which is equipped with three transformers.

The electricity system is planned and operated to our Distribution Licence (which defines the security of supply standards) such that:

- For a single transformer fault at the substation there will be no loss of supplies.
- For faults on two transformers there may be an interruption of supplies to some customers for a period of about one hour. Our Licence Standard allows for three hours.

- For a fault on all three transformers as happened in this case (a rare event outside of our Licence Standard) there will be a supply interruption the duration of which is dependant upon time to reconfigure our network, mobilise generation and deploy staff. The probability of such an event is very low.

Following the major fault in June we have reconfigured the network to provide a resilient supply system in line with our Licence obligations.

- *What were the complexities of this particular repair?*

The repairs in this case are still continuing. The fire destroyed the centre portion of a 3 part switch board. In the hours that followed the fire our staff worked tirelessly to clean the other two parts of the switchboard in order to restore customer supplies. It is worth noting that the fire having started at approximately 0100 on 26 June the Fire Services chose (rightly in our view) not to fight it but let it burn itself out as fire fighting agents were likely to make the recovery situation worse. We were thus denied access until approximately 0700.

Once access was taken we had to review the damage, clean the two relatively undamaged sections of the switch board, test the equipment and return to service. The impact of the fire meant our equipment was badly affected by soot, dirt and heat and this took some time to repair to allow the high voltage equipment to operate safely. During this process we were of course involved in a number of other actions that began to restore customer's supplies on an ongoing basis. This included switching round our network to supply from alternative sources and connecting mobile generators at strategic points.

The ongoing repair requires cleaning the fire, soot and debris damaged centre section of the switchboard, replacing the damaged circuit breaker and replacing other damaged equipment. This is targeted for completion in December 2010 (normally such projects take 18 months to complete).

- *What contingencies did Scottish & Southern Energy make with the Water utility companies in respect of the knock-on effect to water supply and waste water discharge issues?*

The electrical supplies we provide to Water Utility companies are governed by their own perception of the seriousness of a partial or complete loss of power. From our perspective we have no knowledge of customer's criticality but always endeavour to give them what they feel is appropriate for their purposes. Generally speaking a customer who has a large dependence on electrical power will install some form of back up power (typically mobile generation) should the main supply fail.

- *What lessons have been learnt?*

An incident of this type is exceptionally infrequent. However we have noted a number of learning points that will be factored into our future policy and planning. The main examples of these are:

- Coordination with the emergency services and Local Authority is vital in these circumstances and clear lines of communication must be established quickly.
- Power outages can have unexpected consequences that must be factored into our contingency planning.
- Electrical fires in substations require specialist support from the emergency services that need to be discussed and agreed as part of contingency planning.

- *What changes have been implemented as a result of the incident?*

As noted above the incident has prompted us to review our contingency planning. This will result in consultations with those involved that will improve both our own and external agency response to such incidents.

- *What level of investment is there in respect of repairs, maintenance and improvement of the power supply to Portsmouth?*

Over the whole of our network Southern Electric Power Distribution invested in excess of £1.5 billion from 2000 - 2010 and over the next five years we expect to invest approximately £900 million on upgrading, maintaining and improving our networks. The Portsmouth network already exceeds the standards required but we are determined to improve on this wherever possible given the circumstances. One area that is being actively investigated is remote monitoring of equipment that gives early indication of failure. We are currently spending over £1 million annually on Research and Development and a proportion of this is focussed on this area of work.

- *What contingencies were in place for restoration of the power supply had the incident carried on for subsequent days?*

The actions we took following the incident included consideration of this eventuality. We had made contact with suppliers of mobile generation and were in the process of securing the maximum capacity available to secure supplies. We had also been looking at temporary measures to be installed at the substation to reroute supplies and energise the transformers without involving the damaged 33kV switch board. Had the incident gone on for longer we are confident the measures we had in hand would have secured supplies very quickly.

- *What arrangements are in place to reimburse the costs incurred by the council over and above normal response arrangements to provide emergency interventions for your customers who were affected by the power outage?*

In the circumstances of this unique power outage we believe Southern Electric went above and beyond the requirements of our Distribution Licence. We incurred significant costs in our recovery operation and will incur more as we restore the damaged equipment to full service. During the time the power was off all affected parties including the Emergency Services, the Local Authority, other utilities, telecommunication companies, local support organisations and ourselves responded appropriately and in the majority of cases exceptionally to the incident and carried out the functions they were set up to deliver for the residents of Portsmouth.

I very much hope this response to your questions gives you the answers you require and can assure you we are working hard to ensure this incident is not repeated.

Yours sincerely

Alan Broadbent

Alan Broadbent
Head of Engineering
Scottish and Southern Energy Power Distribution