

# SUPPLEMENT TO THE **HISTELEC NEWS**

AUGUST 2010

## **FLOOD REPORT – DECEMBER 1960**

By the late Mr. L.J. Brain

*This report was found in the WPD records by member Steve Riches and we have located some photographs in our archives to match. It is an excellent archive and hopefully will be of general interest to our membership.*

Following several days' continuous rain, the river Avon at Bath began to rise and on the afternoon, of Sunday 4<sup>th</sup> December, it had reached a similar level to other floods, which we have experienced in recent years, in as much as the Lower Bristol Road had started to flood and the Broad Quay, which is adjacent to our Offices. Our own building, however, was visited at 4.00 p.m. on that day and was found to be completely dry.



**Fig.1 Dorchester Street Offices**

The first call was received to deal with flooding in the Larkhall area, which had displaced a paving stone near the cable crossing of the Larkhall brook, but this was found not to be serious. Later in the afternoon, at about 6.00 p.m. calls were received to disconnect services in the St. John's Road area due to the rapid rise of the flood waters and on inspection, it was found that both Amerys and St. John's Road Sub-stations were flooded to a depth of 2 ft. and both these Substations were isolated to prevent damage to the low voltage feeder pillars. An inspection was made of all other Substations in the flooded area, but it was not considered necessary to take any further action as it was thought that the floods would begin to subside during the late evening.

At 6.30 p.m. a visit was made to the Old Bridge Service Centre and it was found that water had begun to seep into the Basement from the position in which trouble usually starts. In anticipation of further flooding, we had constructed wooden pallets in order to raise the appliances in the Store approximately 3-4. ins. off the ground, as on previous occasions this level was about the maximum we had experienced. A number of large items were, however, still on the floor and because of this, the two staff who were present, with the assistance of the wife of one of them, moved these items by means of the lift to the first floor. By 7.00 p.m. it was fairly obvious that the water was coming in much faster than we had anticipated and fortunately, by that time, another member of the staff and his son had also arrived. It was apparent that the water was going to rise above the level of the pallets and total evacuation of the basement might have to take place. Numerous items were, however, raised to shelf level 4 - 5 ft. above the floor, but by 7.30 p.m. the water was coming in through the walls abutting the river and down the ventilating shaft.

At 7.40 p.m. it was found necessary to inspect the Ferry Lane Sub-station and after great difficulty had been encountered in obtaining access, it was found that the feeder pillar at this Sub-station was arcing due to the flood water and it was necessary to isolate the Substation at the high .voltage switch.

Shortly after this, the Parade Gardens feeder at the Generating Station operated on fault, interrupting supplies to the Parade Gardens Sub-station, Guildhall Sub-station, Pump Room and Laura Place Sub-stations and it became apparent that an explosion had occurred in the 6.6 kV air insulated busbars in Parade Gardens Substation. Supplies were restored to the Guildhall and Pump Room Sub-stations in less than an hour, but the Parade Gardens and Laura Place Substations could not be re-energised.

While all the operational' work was proceeding, the Standby Electrician had fortunately contacted a number of employees, whom it was possible to reach, bearing in mind, that only one road from the City was useable and by 8.30 p.m. we had approximately twelve employees assisting in the evacuation of the basement and the

Showroom. Water was now cascading into the basement from three sides and salvage work was seriously hampered by the onrush of water through the rear of the Generating Station yard and down: the back staircase. In the meantime of course, the lift had become unusable owing to electrical faults. Not only were these employees engaged in the actual moving of stock, but also had to contend with the problem of trying to dam the water by means of sandbags, which were provided by the City Engineer, mainly to safeguard the electrical switchgear etc., in the Generating Station. It will of course be appreciated that in our basement, we have two Scott banks of transformers and an L.V. fuse-board apart from the complete switch-board installation for the building, all of which were by then seriously threatened by water.

On investigating reports of no supply in the Bathford and Bathampton area, it was found that the 11 kV Scott group transformer oil circuit breaker, and 2.25 kV oil circuit breakers had operated at Bailbrook Lane Substation. This was caused by the flooding of the 2.25 kV Sub-station at Bathampton Weir Tea Gardens. This section of the 2.25 kV network was isolated and supplies were restored to Bathford at 9.40 p.m.

At 10.20 p.m. the Pump Shop 6.6 kV oil circuit breaker at Bath Power Station operated on fault, interrupting supplies to five substations on the Lower Bristol Road. This incident was later found to be caused by an explosion and fire in the Pump Shop Sub-station due to the high flood water level. Supplies were restored to Brougham Hayes and Locks by alternative means at approximately mid-night, but it was not possible to restore supplies to the Pump Shop, Wansdyke Shoe and Cooks Sub-stations due to the high flood level.

As we said earlier, water was creating a hazard from the electrical point of view in the basement of the building and the Standby Engineer therefore withdrew the fuses and the supply was switched off. Limited emergency lighting was obtained by the use of a few Tilley lamps, which of course made the salvage operations much more difficult. Because of the darkness in the basement and the slime, which was in the water, it was necessary to abandon all salvage work in the basement itself at about 10.00 p.m.

While this had been going on, the Service Centre had been cleared of all appliances with the exception of one cooker and one Deep Freeze Cabinet, which was electrically connected. By this time, the water was 12 ins. deep in the showroom itself and was coming in through the front door from Southgate Street and Dorchester Street. The water in the basement at the time work ceased, was approximately 3 ft deep and it became necessary to isolate the transformers in the basement thus interrupting supplies to the Southgate Street and St. James Parade Area at approximately 10.50 p.m.



**Fig.2 The Showrooms Flooded**

At 11.45 p.m. it was realised that no further salvage work could be carried out in the building until the water had subsided or been pumped out. At half an hour after midnight, water was still rising and was within 2 ins. of the secondary wiring on the Norrington "A" 33/6.6 kV transformer oil circuit breaker and it became necessary to isolate this circuit as a precautionary measure.

The Chief Constable had allocated priority to the saving of the Generating Station so that, due to the efforts of the Bath Fire Services and the Auxiliary Fire Service, the flood water was held in check and it was possible to re-energise the Norrington A transformer at 6.45 a.m. on Monday 5th December and by this time, the flood water had reached its peak and was beginning to subside. At this time the water in the building had completely submerged the basement and staircase and was 18 ins. deep throughout our Service Centre.

Due to the telephones being affected over a large part of the City by the flood water, it was necessary to fetch additional Engineers to continue the restoration of supplies and also operate a local control in the Bath district, for which purpose an emergency operation room was established in the Operation and Maintenance Office.

When the staff arrived on Monday morning, it was impossible for them to enter the building in the normal way and they therefore had to make a detour over a footbridge lower down the river in order to get to the Office, which was completely without any form of heating or lighting. As mentioned above, the Post office telephone system was subject to numerous breakdowns and our internal telephone system was completely out of commission. It is very creditable that not one member of the staff failed to report for duty and this particularly applies to the Engineers, most of whom had already been carrying out many hours of continuous work. All the Engineering manual workers were held at base to be available for the repairs etc., and all Engineers reported to the emergency control room for instructions.



**Fig.3 Southgate Street Flooded**

Realising that a number of the men and staff had been subjected to very trying times, an emergency canteen was set up at our Lower Borough Walls Service Centre, where hot soup and food was available to them.

While supplies were being restored to the Laura Place area at approximately 9.30 a.m. by alternative LV feeders, it became apparent that the main 6.6 kV switch-board at Midland Depot Sub-station had become flooded and was liable to break down at any time. This switch-board was isolated during the morning, interrupting supplies to Newark and Midland Depot Substations, including the supply to the sewage pumps. By lunch time on Monday, thirteen Substations were without supply. The L.V. feeder to the Newark Street area had failed in the early morning, interrupting supplies to the Co-operative Dairy, the Bus Depot and Spears among other Consumers. This incident caused very great concern to the Medical Officer of Health because of the pasteurising plant being out of order at the Dairy and a temporary supply was provided by an overland cable about midday. Temporary supplies were also provided to Messrs. Holloways in Southgate Street to keep the refrigeration equipment working.

Realising that a great number of houses in the City had been flooded, a member of the staff was sent to visit all our own employees who were known to live in the affected parts. In all, it was found that eleven employees had received flood damage and it was very pleasing to be able to arrange for immediate assistance from the Manual Workers Benevolent Society for four of them, who were members. Two other members of the Administrative Staff were sent to the emergency rest centre, which had been set up at the Civil Defence Headquarters in Walcot Street. To find out whether any of our employees had been made homeless, we are pleased to report that this was not the case. The Supervisor of the Rest Centre was however very grateful for the fact that supplies had been maintained throughout the night to their building.

The main concern regarding electrical supplies was now concentrated on the South Parade area where a number of hotels were without supply due the Parade Gardens Substation being out of action. Supplies were restored to the Empire Hotel (Admiralty Headquarters) by disconnecting a cable to the Parade Gardens and energising the Sub-station from an alternative high voltage source during the morning. A limited supply was also provided to the South Parade area during the morning by installing a transformer and re-energising the old 2.25 kV 200 kVA Substation at North Parade, but the major work of restoring supplies in this area was carried out by installing a 500 kVA 3-phase transformer on the pavement at the junction of North Parade and Pierpoint Street with temporary connections to both the high voltage and low voltage system. This temporary substation was energised at approximately 6.30 p.m. in the evening.

During the afternoon it was possible to gain access via a long boat trip along Lower Bristol Road and climbing various cranes to isolate the Midland Road Depot feeder at Newark Substation and thus restore supplies to the Newark portion of Stothert & Pitt Works.



**Fig.4 Lower Bristol Road Flooded**

The City Engineers became very concerned regarding the loss of supply to the Sewage disposal Plant at Midland Depot Substation and two mobile generators were obtained from Bristol to operate these pumps on an emergency basis. A limited L.V. supply was also restored to the Midland Depot Substation by placing sand bags around the low voltage disconnection boxes Lower Bristol Road and pumping the water out so that the links could be installed. By use of this limited LV interconnector and the two mobile generators, the supply was restored to the sewage disposal plant during Monday evening. At this stage, eight substations were without supply and as the flood water had only receded approximately 2ft, it was not possible to commence

restoration of these supplies until Tuesday morning. As it was obviously impossible to carry out any work in our showrooms as the water had not receded, some staff were transferred to our Lower Borough Walls Service Centre where a full consumer service was given.

In order to facilitate the work of the Engineers, temporary supplies of lighting and power for the internal telephone switchboard were laid on from the Generating Station, to whom we loaned some fan heaters to assist them in drying out their motors. By Monday evening, all supplies had been restored with the exception of places we were prevented from doing so by the presence of flood water.

On Tuesday morning, 6th December, the Service Centre floor was clear of water and as a covering of mud had been left all over it, it was hosed down and cleaned up. It was obvious that the water in the basement would have to be pumped out by mechanical means and as it was still impossible to obtain an appliance from the Fire Service which was still busily engaged in the Generating Station, a pump was obtained from the National Coal Board, which was capable of pumping 200 gallons per minute. This pump was put into operation at 10.30 a.m. and by 5.00 p.m. on the same day, we were able to enter the basement where a scene of utter devastation greeted us not only was everything spoiled by water and mud, but the transformer oil had also overflowed and deposited a thin film over everything that remained there.

On Tuesday morning, all Engineers were again delegated to various Substations to re-store supplies and it was found necessary to change the oil in the fuse switches at Amerys, St, John's Road and Ferry Lane Substations. A limited LV supply was restored to the latter Substation during the morning, but full supplies were not restored to the St. John's Road area until the late afternoon.

Weston Mills, Stothert & Pitt, Victoria and Cooks Substations were all re-energised during the day after drying out had taken place, but the Showrooms Basement Substation and the Pump Shop Substation were a more-difficult task.

The HV gear and transformer at Pump Shop Substation were severely damaged, both by explosion and fire, but it was found possible to provide a limited L.V. supply to this area during the late afternoon. Limited LV supplies were also provided to the Southgate Street area during the afternoon by jointing the cables in Southgate Street from an alternative source.

All supplies with the exception of Bathampton Weir Tea Gardens were restored by Tuesday evening; the transformer in the latter Substation was replaced on the Wednesday morning. It was decided to install temporary transformers in the transformer workshop adjacent to the showrooms and these transformers were energised on Thursday morning 8<sup>th</sup> December. The new gear was

installed in the Pump Shop Substation. This was re-energised on Thursday 8<sup>th</sup> December.

The main switchboard at Midland Depot Substation was found to be severely damaged by water and electrical arcing, and on inspection a number of units had to be changed. The switchboard was energised in sections, firstly to re-energise the local transformer and restore full supplies to the sewage disposal equipment and the repair work continued until Sunday 11<sup>th</sup> December, when the HV system for this area was restored to normal. Work also continued on the replacement of the switch-gear busbars at the Parade Gardens Substation, which, due to the splendid cooperation of the Yorkshire Switchgear Company in supplying a replacement board, was re-energised and restored to normal by Saturday 10th December.

It was possible to re-open the Service Centre on the afternoon of Wednesday 7<sup>th</sup> December, by which time, temporary supplies had been given to most parts of the building. It is significant that the last person to receive a supply of electricity was a member of the Engineering Staff who was only shortly preceded by the District Manager.

In view of the considerable damage done to the recently established Demonstration Theatre and the stores remaining in the basement, our insurers were of course notified early on Monday morning and requested the attendance of an Assessor to be appointed by them, who, in fact turned up in the company of one of our Solicitor's staff on Wednesday. In the meantime a complete stock check was being carried out by the Group Accountancy Staff at our request.

It is not likely that the basement can be used again for sometime again and it is not proposed to re-establish the Substation in its original position. For the time being, we shall have to maintain the LV fuse-board, but it is also planned to remove this during the coming financial year. As all Engineering supervisory staff were fully committed on the emergency, it was necessary for the Forman of the Overhead Gangs to control the labour force and work during that time.

In trying to summarise the events in this Report, we have omitted making any personal references. The greatest debt is due to all those staff and manual workers who worked so hard at the outset and over such long hours during the week in order to restore supplies and alleviate the loss, which the Board would otherwise have suffered. This effort was given spontaneously and in a wonderful spirit, because of which we were able to cope with the situation entirely within our own resources and without the need of any outside assistance whatsoever.

**RGC/LJB/JMW.**  
**The Old Bridge, BATH. 13.12.60**