

STIRLING BEFORE PYLONS

acting with

FRIENDS OF THE OCHILS

as a Relevant Person Group

for the purposes of the

STIRLING SESSION

**of the Public Inquiry into
Scottish & Southern Energy's proposals for the
Beauly to Denny 400 KV Steel Tower Double Circuit
Overhead Electricity Transmission Line**

PRECOGNITION

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Hydrology (Private Water Supplies)

1. My name is Nicki Baker. I have a first degree in mathematics and a PhD in Transport Studies. I worked for 31 years in the public sector, in several universities, the Scottish Health Service and Scottish local government, on research, analysis and statistical issues related to public policy.
2. The house I live in depends on a private water supply, so I have a particular interest in ensuring that issues relating to private water supplies are properly dealt with in the Inquiry.
3. This precognition uses that private water supply to illustrate the fragility of private water supplies, and the need for great care to be taken when carrying out civil engineering works in their vicinity, and calls for stringent Conditions to be applied to any permission that may be granted for the proposed works.

Background

4. In rural areas, many properties have to rely on private water supplies because a public water supply is not available to them. In the Stirling area, we know of a number of properties that would be close to the proposed works and that rely on private water supplies. Those supplies include surface sources (springs or burns), water harvested by pipes buried in wet ground, and wells. They are the only option available to each of the properties at the current time for the supply of water.
5. We believe it was a failing of the Environmental Statement that very little attention was paid to the issue of private water supplies. It says in paragraph 21.8.10.1 that “a detailed assessment of the effects of the proposed project on private water supplies has not been possible”. We suggest that this would have been perfectly possible; it was simply a choice not to do the relevant work. That choice is regrettable, given how difficult the situation will be for its users if a private water supply becomes compromised by the construction works.

6. One of the water supplies in the vicinity of the line (which my house uses) is shown on the map at StBP / 9 / 2. I use it as an illustration of the sorts of issues that need to be taken on board to protect the users of all the private water supplies that may be affected by the Beaulieu – Denny construction works, should they go ahead.
7. This particular water supply consists of a well, some 3 metres deep, in a wood, and is situated some 500 metres from the proposed power line. The well supplies water to two farms by gravity feed pipelines. The main farm, Drumbrae, includes several residences and a riding school, and keeps both beef cattle and sheep. The other, Parkhead, includes two separately owned residential properties, as well as grazing for Drumbrae's livestock.
8. The Environmental Statement included a list of users of private water supplies situated within 1 km of the proposed line and known to the local authority. It showed no knowledge of the water supplies themselves, or of users of such supplies situated more than 1 km from the line. In the case illustrated here, Drumbrae is a little over 1 km distant from the proposed line, but the well is only about 500 m from it. The approach adopted in the ES therefore misses out properties such as Drumbrae, which are vulnerable but do not fall within the over-rigid criteria, and illustrates an inadequacy in the methodology used.
9. The well has not failed in living memory, and is reputed to have never failed in 200 years. Problems have however been experienced from time to time with the pipe works.
10. When news first surfaced about SSE's proposed power line developments, we tried to find out more about the water supply and its possible vulnerability to the works. This proved almost impossible. Qualified hydrologists are few and far between, and we could find none that was available to carry out an on-site investigation and prepared to

give an independent view in the current circumstances. However, advice that we did receive after sending geological maps and photographs to a hydrologist in England suggests that the principal source of the water in the well is probably (but not certainly) the superficial clay deposits in which it is located. This needs to be evaluated on-site by a properly qualified hydrologist.

11. We are advised nevertheless that there is a risk that the water could be contaminated by leakage of petrol / diesel / solvents etc on the construction site, and making its way down to the water in the well – particularly as the proposed construction works would be uphill of the well. This suggests the need for regular – indeed, probably frequent – monitoring of the quality of the water supply during the course of the construction works in the area, and perhaps for some time after their completion, to ensure that no contamination has taken place. Such monitoring would need to be able to detect any of the contaminants that might occur.

12. The above case study is just a single example of a private water supply in the vicinity of the proposed works, but considering it helps to identify a number of actions that we believe must be required of the contractors, before such time as they are permitted to start work:
 - A full and thorough survey should be required, to identify each and every private water supply that could feasibly be damaged, disrupted or contaminated by the proposed works.

 - Careful evaluation of each one, to identify the potential risks to that supply, from the works.

 - Exploration of feasible alternative supplies, should each one be irredeemably compromised. Where no possible and satisfactory alternative exists – as will be the case for some properties –

then extreme care will require to be taken by contractors to avoid risk to the existing supply.

- Testing to evaluate the initial condition of that water supply, in terms of water flow and water quality.
- Regular testing throughout the period of construction works, and for an appropriate time thereafter, to identify any problems arising (since not all would be readily apparent to the user).
- All of the above would need to be carried out by independent, competent professionals, paid for by the contractors but answerable to a neutral, independent body.

13. When a private water supply fails, it is entirely up to the owners / occupiers to sort out the problems. In years gone by, it would have been possible to contact the local water authority (until 1996, the regional council) and arrange for a water bowser to be provided. This is no longer possible. As we have found in the recent past, the user of a private water supply can expect no help from Scottish Water, or from their local authority; they must find their own solutions.

14. The reality is that, if the problem cannot be fixed quickly, there may be no satisfactory alternative supply that can be acquired by the private individual, other than acquiring bottled water, and the resulting problems can be very significant indeed. We believe therefore that the contractors should be required to identify suitable sources of temporary water supply – such as water bowsers, along with the arrangements that could be made to have them filled, delivered, connected and replaced as required – as contingency plans, to cover all users of private water supplies in the vicinity of the power line construction works, before being allowed to start work. We argue that it will be too late to start to think about such contingencies when a problem has already arisen.

15. Where the problem with the water supply is long term or irredeemable – for example, if a supply of water should become long term contaminated, or is diverted away from the source used – the user will have to find a new source. This may be far from simple: it requires identifying where a new source of water may be located, getting it assessed and tested, negotiating with the land owner for long term access to that supply, negotiating with other land owners for wayleave for a pipeline, carrying out the civil engineering works required to set up a pipeline, etc. Indeed, as stated above, it may prove impossible in some cases.
16. This process must be expected to take many months, perhaps a year or two.
17. In the meantime, the properties affected may be left effectively unusable. Further, if they are farms with livestock, and there is no other satisfactory source of water (such as a burn) on site, the welfare of animals such as cattle and horses will be put very seriously at risk, and the farm may become unusable until a satisfactory water supply is restored. In the worst case scenario, if a water supply is lost and there is no other to be found, the property becomes unusable and would lose all value.
18. This obviously raises important questions for occupiers, as to whether they can obtain sufficient supplies of water to continue living there, and whether this situation will be sustainable until either the problem with the water supply is resolved, or an alternative is found. If the situation cannot be adequately resolved, alternative accommodation will have to be found.
19. Of course, all these issues may cost a great deal of money in addition to causing a great deal of discomfort and worry. In the case of a business, its profitability or its very existence would be likely to be compromised.
20. The possibility of problems such as these goes with the territory of being dependent on a private water supply. In the case of the proposed upgrade to the Beaulieu – Denny line, however, it is more than likely that the works

would damage one or more private water supplies. There is therefore a requirement to work out, at this, the planning stage, how users of private water supplies can be satisfactorily protected, supported and / or compensated for any problems caused by the construction works.

21. Table 21.11 of the ES contains the bland statement that mitigation measures would comprise “identification of all private water supplies during detailed design and avoidance during construction”. Of course every effort must be made to deliver both these measures. In practice, however, it will not be possible to guarantee avoidance, and it must be assumed that some damage will occur, somewhere. The issue is then what measures will be taken, and taken swiftly, to deal with the problems arising.

22. Paragraph 21.8.10.2 of the ES states that “The contractor ... would agree a procedure to provide alternative (whether temporary or permanent) potable water supplies to affected properties and businesses”. The issues here include the following:

- Under what circumstances would the contractor provide alternatives? We believe that the contractors should accept responsibility, in the first instance, for providing a temporary alternative supply for any private water supply which might potentially be affected by the works, and was experiencing new problems with that supply that could feasibly have arisen from the works. Having the contractors sort out the problems in the short term should take precedence over establishing definite liability, even though this would obviously be necessary in due course.
- What constitutes an “alternative supply of potable water”? This might mean simply providing a number of bottles of water – enough for drinking and cooking, perhaps, but not sufficient to flush toilets, take a bath or shower, or wash clothes. Such a

solution could not be deemed acceptable for more than a day or two. Such issues were well highlighted in this summer's floods in England, which may provide some valuable lessons. There is a need therefore to define what constitutes adequate alternative arrangements. This would need to include a statement of the maximum length of time such arrangements could acceptably be in place.

- Where adequate arrangements for a replacement supply, whether temporary or permanent, cannot be made, what responsibilities will the contractor accept? Finding alternative accommodation would be likely to be very costly; those affected would need clear assurances that the costs would be accepted by the contractor.

23. With even domestic scale building works, problems occur. Many people have experienced situations where the problems have been greatly prolonged or magnified by difficulties in getting the contractor to take appropriate responsibility. With the Beaulieu – Denny line, it must be assumed that there will be damage or loss to private water supplies, no matter how well-intentioned the contractors. Natural justice dictates that any third parties affected should be able to rely on a sympathetic, prompt and supportive response from the contractors. This is most unlikely to happen unless appropriate Conditions are in place from the outset, placing stringent obligations on the contractors that can not be avoided by them.

24. I have set out above some issues that I believe should be addressed in the Conditions to be attached to any approval given to the applicants. We consider that this matter needs to be addressed by appropriate experts, and fully and properly resolved at the Conditions session of the Inquiry.