SAVE
RADLEY LAKES
www.saveradleylakes.org.uk
email: *info@saveradleylakes.org.uk*

Press Release 02 September 2007

SO YOU THINK THEY'VE ASSESSED THE FLOOD RISK!

A few months ago, people in Britain suffered a great shock, two severe flooding episodes within a few months left many with their homes under feet of water and their lives disrupted. It is distinct possibility that flooding will become more frequent and severe as global warming increases, so it is imperative that flood modelling and risk assessment are carried out as accurately and effectively as possible. The process must be fit for purpose. So, is it?

Here, at Abingdon, there have been two severe floods in the past four years. Regardless of this, RWE npower is planning to turn Thrupp Lake, a large local lake next to the Thames, into an impermeable, clay lined, four metre high tip to take waste fuel ash from Didcot Power Station. Scientists investigating the flood risk arising from this proposal identified a number of serious inadequacies in the flood risk assessment process. These inadequacies seem likely to be replicated anywhere in the country, especially where big companies seek to increase profits through development on flood plains. The inadequacies they identified were:

1. **Flood risk assessments are not independent.**

These are carried out not, as you might think, by the Environment Agency, (EA), but by contractors, appointed by the developer, who may even be contracted to carry out the development itself. The EA's role in this is purely one of oversight and approval.

2. **There is no requirement for the developer to include the effect of 'temporary structures' in the flood plain in their flood risk assessment, even though they may be massive and long lasting.**

For instance, next to the Thames, just upstream of Abingdon, is a massive, 40 acre clay-lined waste tip filled with power station ash - the result of npower's previous filling of Lakes H and I at Radley. This structure projects above and below the flood plain and obstructs the flow of both surface and ground water, just the sort of development everyone agrees increases flood risk. However, as far as the flood model used by npower's contractors is concerned, this massive structure is not there, it doesn't exist. No attempt has been made to incorporate its effect into the models, either before it was created or since, despite two major flooding events in that time. The EA consider "H/I" to be a 'temporary structure' until it is finally 'reprofiled' many years hence, if ever. Meanwhile, it represents a massive obstruction to the flow of floodwater, but one that is totally ignored by the model of this stretch of the river.

3. **Developers can manipulate flood forecasting models for their own ends.**

Flood modeling is a very inexact science. Models are constructed and tested using data from actual flood events. Poor data collection will produce a poor model that does not give accurate forecasts. In the area between Radley and Abingdon there seems to have been little data collected and, not surprisingly, for both the 1947 and 2003 floods, npower's flood model seriously underestimated the actual flood levels reached.

Flood models usually depend on lots of adjustable parameters (such as the gradient and profile of the river bed). Here again, poor data collection gives the developer plenty of opportunity to tweak the model, perhaps to obtain the outcome from it that they want. The EA often has little grounds to object to the possibly biassed assessment - the onus is put on them to prove that there is unacceptable risk, which, given the high levels of uncertainty accepted in such modelling, would generally be very difficult. So, when dealing with powerful corporations they may be forgiven for not wasting their time objecting and risking the trouble it could cause them.

4. The flood models are too inexact and may not be fit for purpose

Whether particular properties are affected by flooding, or even if flooding occurs at all, is often a matter of mere inches. Yet the flood models are typically far too inexact to predict to this kind of precision, even when the flood is only hours away. In the flood risk assessment for Thrupp Lake, the Environment Agency was apparently willing to tolerate discrepancies between modelled and actual flood levels for real events of up to a quarter of a metre (10 inches). It may well be that such discrepancies are an inevitable consequence of the current state of the art. But then, the correct thing to do would be to err on the side of caution; one should tend to overestimate the risk and plan accordingly. This is not what happened with the flood risk assessment of Thrupp Lake. Rather than erring on the side of caution, the inexactness of the model became the means whereby risk could be underestimated and what was, at the outset, an apparently risky development, was allowed to proceed.

Given the lack of funding given to the Environment Agency to support independent work in this area, it is perhaps unsurprising that the models are so inexact. This is worsened by the failure to collect data, with which models may be tied to reality, especially during actual flooding events. This need not be expensive. During the recent floods, river levels were continuously monitored at Abingdon Lock, but no measurements were taken at the upstream lock at Sandford. This means that the data along this reach are deficient (and have been for years) and there is little to provide a basis for a good model of it. If this situation is typical of other reaches of the river, is it any wonder that the model's powers of prediction are weak?

The Environment Agency needs to give much more attention to its existing models, not only to ensure that they are fit for purpose, at the present time, by incorporating accurately calibrated models of each reach, taking account of seasonal changes in vegetation, the reality of temporary obstructions on flood plains etc, but also so that they can cope with the consequences of future planned development and climate change. Climate is the ultimate governing factor, for it determines the likely frequency of high rainfall events, the vegetative cover, ability of soil to soak up rain, and the probability of other exacerbating factors such as wind, frozen ground etc. Climate change has introduced a new element of uncertainty and means that the need for accurate and dependable flood modelling is becoming ever more important.

5. The process of flood risk assessment is flawed and unscientific

At present, the whole procedure for assessing flood risk is flawed, unscientific and not independent. Big corporations, like RWE npower, reap the benefit of this flawed process, whilst ordinary people whose homes are flooded and lives disrupted bear the cost! Decisions about flood plain development, including the filling of Thrupp Lake, are based on over-simplified flood models, which are barely fit for purpose, and a flawed system of flood risk assessment which lacks proper independence and which can be 'interpreted' by developers to suit their own ends. People should therefore not be too surprised to find, from time to time, floodwaters lapping unannounced at their doorways.

For further information contact: Marjorie White on 01235 216428 or 01235 530174,
or visit www.saveradleylakes.org.uk or the news pages at www.radleyvillage.org.uk .