

Nuclear power station loss of electricity grid during severe storm (1998)

Situation: On Boxing Day 26<sup>th</sup> December 1998, Central Scotland suffered an exceptionally severe storm, perhaps even hurricane force. I was British Energy's Nuclear Safety Manager at the time. I was away from home visiting relatives over the Christmas period, as were many other non-essential personnel.

The storm caused loss of the electricity grid connections to Hunterston B nuclear power station in Ayrshire, possibly due to wind-borne salt spray leading to arcing at pylons. The two reactors shut down normally, the diesel generators started up normally, and the shift staff dealt well with the situation.

- Incidentally, the storm also caused some damage to houses, some roads were blocked by fallen trees, and there were extensive failures of the mobile phone network. This affected to some extent the ability of staff to get to the site; it also affected the ability of station staff to contact non-essential staff for support. Personally, I didn't know about what happened until the following day.

The grid connections were restored, and station staff set about restoring the plant and making it ready for restarting power generation. Diesel generators were shut down, and left on 'manual start', as was the norm when the power station was shut down. (In hindsight, this was clearly an error, and procedures were subsequently changed.)

Meanwhile, the storm was still in progress. Some hours after the original event, the grid connections were lost *for a second time*. The reactors were still shut down but, because the diesel generators had been left on 'manual start', the site was blacked out, with only battery supplies available for essential instrumentation and lighting. The reactors (still generating significant post-shutdown decay heat) were therefore left without forced cooling for a short period of time - maybe 30 minutes or so - until shift staff started the diesels manually.

No damage was done to the reactors and there was no release of radiation to the environment – this was always several steps away – but, in a low-key way, the event has some similarities to the Fukushima accident in 2011. Mother Nature can be overwhelming and, when she is, several things can go wrong simultaneously.

The event was reported to the regulatory authorities (HSE, WANO) and analysed thoroughly, and lessons were learned and disseminated. I recall that the event was rated as 'INES 2' on the International Nuclear Event Scale (on a scale of 1 to 7).

Moral: Mother Nature is a bitch. Independent and pragmatic review of actions during fault conditions should be carried out periodically.