

Re: "Nuclear energy 'not the solution to global warming"

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- *From:* dave.walters@xxxxxxxxxxx
 - *Date:* 31 Mar 2007 05:49:25 -0700
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On Mar 31, 1:26 am, "Alex Terrell" <alexterr...@xxxxxxxxxxx> wrote:

I don't understand why they almost tripped the system on a windy day. Surely the problems would be greatest on still days with no wind, especially cold ones where demand for electricity remains high.

Because of the fluxuation in generation vs load. The solid state equipment designed to smooth out the voltage problems when the generation is going all over the place simply couldn't handle the amps and voltage. When there is no wind, obviously, this not a problem. Also, the fluxuation was whipping the whole grid centrifugally, and the hydro units, which usually can be controlled VERY quickly by opening and closing the penstock gates on each turbine couldn't handle the Norwegian side the so the whole grid almost collapsed.

And...nuclear is also a good match with hydro, which is what the French do, with little or no fossil buring at all. For that matter, w/ enough nuclear you could do wind too.

Everything is a good match with hydro, especially if you don't mind turning a river on and off. (I remember kayaking on the Tully? in Queensland. Kayaking and rafting needed to be coordinated with electricity production.)

Actually, it's never the whole river, but a small proportion of a river, that flows down a 'penstock', usually, and into the turbines. The turbine/generators are mounted vertically (unlike all other types of geneator) and the flat, wide turbines have 'windows' mounted around the circumfrance of the turbine housing. These windows, or vanes, close and open according to load.

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Nuclear and wind are not easily responsive to demand. (Nuclear can be turned down, but no money is saved, as the interest payments are not dependent on output).

Nuclear can can up and down but yes, the agreements usually mean that they have to run flat out 24/7.

If hydrogen were ever to become a useful fuel (a big if), then high temperature reactors (e.g. PBMR) could switch to thermal production of hydrogen when demand for electricity is low.– Hide quoted text –

Yes indeed. That's the future. Each oil refinery, for example, haveing one PBMR or sharing one, would run all the chemical/hydrogen production/petrochemical/process heating, AND producing some power in co-gen mode. I can see having about 3,000 of these installed around the US alone.

David

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