

Letters

Load-following capability essential

While our industry representatives have kept promoting CANDU as reliable baseload supply to all who would listen, the (Ontario) Independent Electricity System Operator (IESO) has just come out with a draft load-following standard. *IESO Stakeholder Engagement SE-38, Load Following Standard* was issued by the IESO in early April 2007 with a request for comments. According to the IESO website the final version is due to be posted in late May 2007. Due to the complexity of the issue and questions raised it is unlikely that this date will be met.

This standard is a result of recent periods of negative pricing by the IESO. As the IESO puts it, "The presence of negative prices is a clear indication that dispatchable resources in operation during these periods prefer to remain on line; and are essentially restricted, or completely unable, to provide ramp-down services".

Such periods are expected to be more frequent as more self-scheduling and intermittent wind power comes on to the grid. In the absence of dependable export markets, and energy storage facilities like hydrogen and compressed air, nuclear plant load following will be essential if nuclear is to grow in Ontario.

The nuclear industry advertises baseload but the IESO wants load following. This conflict should come as no surprise. A letter on load following in the December 2005 edition of this Bulletin pointed out that the IESO had said in July 2005, in its 10 Year Outlook, that Ontario's future generation supply mix will place an increasing reliability value on the capability of units to load-follow, provide operating reserve, and automatic generation control (control of grid frequency). The message was clear yet the Canadian nuclear industry still went droning on about nuclear as reliable baseload with no mention of load following. They did such a good job that the Ontario Power Authority (OPA) report of 2005 December 9 on the future electricity supply mix for Ontario contained many references to nuclear as being too inflexible, and useful as a baseload source only.

The assumption that Ontario could not, apparently, depend on nuclear to meet daily load fluctuations was one more reason for the government's proposed supply mix.

The future nuclear electricity supply plan for Ontario is a little confusing. The government is saying that it will maintain the present 14,000 megawatts of installed nuclear (including the two shutdown Pickering units) into 2025 by building two new units. However, Ontario Power Generation (OPG) and Bruce Power have submitted proposals to the Canadian Nuclear Safety Commission for eight new units, presumably ACR-1000s but could be LWRs since the government has yet to decide on the technology. Whether these are in addition to the present operating units and units undergoing refurbishment or are to replace units that will be mothballed, or even permanently shutdown, is not clear.

The government is putting a lot of faith in conservation and renewables. Since the hydro-electric potential is limited that means wind power, supported by natural-gas fired generators, will be a major part of the energy mix. However, since the only significant dispatchable supplies planned for the future will be nuclear and gas, and the supply from the gas units will be restricted because of fuel availability, cost and the environment, it means that nuclear is expected to play a much

greater role than the 50 percent grid penetration assumed in the OPA supply mix report or the government's stated 40 percent by 2025.

OPG and Bruce Power apparently understand this. It may have even precipitated their proposal to the CNSC for eight units rather than the government's two units. Being responsible for Ontario's economic future brings a certain clarity of thought that could have made OPG and Bruce Power understandably nervous about the amount of conservation, and wind and gas generation in the government's plan.

If nuclear-electricity is to meet baseload and, at least, intermediate demand in Ontario, and allow for the shutdown of the coal-fired plants, the industry had better change it's tune and start trumpeting CANDU load-following capabilities every chance it gets, and soon. At the same time the experts should be bringing the OPA and the IESO up to speed on nuclear load-following capabilities to dispel any myths they have about it. If CANDU can outperform other reactor designs in load following let us say so. Ontario should be aiming for 70 percent nuclear generation by 2025 instead of the paltry 40 percent, with hydro supplying most of, if not all, the balance.

This would help meet our Kyoto targets as well as give Ontario a secure source of clean electricity far into the future.

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