

## Textbook shutdown a big Burrup hiccup

Nigel Wilson, Energy writer | *January 05, 2008*

**AT 8am local time on Wednesday, the alarm bells began ringing at the main electrical substation at the North West Shelf gas processing facility on the Burrup Peninsula, near Dampier.**

Within minutes the huge plant, integral to a project investment of well over \$20 billion, began to shut down automatically, ultimately forcing the suspension of LNG, domestic gas, LPG and condensate production. But Perth, which relies on piped gas for about 40 per cent of its electricity generation, suffered no blackouts.

There was no fire, but that means that the cause of the substation failure may take weeks to establish. At least the failure, according to project operator Woodside, will not materially affect annual production.

But bringing the plant back on has proved more difficult than anticipated, with machinery normally operated on gas being a little more difficult to start up on diesel or distillate fuel.

It is the biggest crisis yet to hit the production facility, which began domestic gas operations in 1983 -- far greater than the shutdown in the late 1980s when the project's two offshore production platforms, North Rankin A and Goodwyn A, were upgraded to take account of the lessons from the Piper Alpha disaster in the North Sea.

That shutdown led to problems in domestic gas delivery because the Dampier-to-Bunbury natural gas pipeline, Australia's biggest gas transmission system, began shutting down itself as pressure declined, resulting in a major gas shortage.

The current crisis is being managed by Woodside's chief financial officer, Mark Chatterji, while managing director and CEO Don Voelte is on leave.

Woodside said late yesterday it believed that if all went well, the domestic gas plant would be back in full operation overnight. The plant can deliver up to 600 terajoules a day.

Gas was gradually reintroduced into the Dampier-Bunbury pipeline yesterday, and gas supplies were expected to return to normal about eight hours after the resumption.

Flow in the pipeline itself will take several more hours to return to normal.

By all accounts the Burrup shutdown was textbook in its operation.

The main electrical substation problem -- which resulted in smouldering switchgear but no fire -- began an automatic procedure which everyone hoped would not happen, but which was necessary to ensure the integrity of the plant and the safety of the project's workforce.

No one was injured and the only people who left the site were construction workers from the \$2.6 billion fifth production train, which is on schedule to be commissioned late this year. With no electrical power, it was pointless keeping them on site.

With gas being purged from the production facilities, as safety procedures demand, the only outside indication of a problem was the vastly increased gas flare and associated black smoke from the flare tower that dominates the inland end of the plant.

While much of the public drama surrounding the shutdown concerns gas supplies for power generation in Western Australia, and for domestic households -- which represent only about 5 per cent of total gas demand -- the impact of the Burrup plant problems on other gas consumers escalated rapidly.

While careful fiddling of electricity generation capacity, both coal and gas, private and government-owned, and reduction in commercial demand has avoided major power disruptions at a time of high temperatures and high domestic air-conditioning load, the effect on other major gas users has not been so easy to manage.

Alcoa, the major producer of alumina in Western Australia which, in turn, is the world's biggest alumina supplier, reported yesterday its output was down to one third of normal and it would have difficulty maintaining operations if the gas shortage were to continue much longer. Alcoa takes just under half of the domestic gas produced in WA.

An Alcoa spokeswoman said that on Wednesday morning the NW Shelf joint venture had advised it of problems with gas supply at the same time as the Dampier-Bunbury pipeline alerted the company of the problem.

Immediately following the advice, Alcoa made its own assessment of the impact of limited gas supply. It modelled its response on the availability of electricity in the system, alternative fuel supplies, the availability and maintenance of supply, environmental impacts and finally the sequence of reduction in production.

By late Wednesday, Alcoa had begun introducing alternative fuels such as diesel.

By Thursday afternoon, the company was being forced to divert some of its scarce gas supplies to its raw material suppliers, such as lime producers, to maintain their operations as well as replenishing alternative fuel supplies across all its sites.

While Woodside believes it will get through the crisis without any major disruption to LNG shipments -- and thus protect its reputation as one of the world's most reliable suppliers of LNG -- Alcoa officials warned late yesterday that alumina shipments could be missed if gas supplies did not quickly return to normal.