Nick Squires looks in vain for doughnuts and a man called Homer - but this ain’t Springfield.

Photography Sahlan Hayes

We are sitting in a room just metres from the cool blue heart of Australia’s only nuclear reactor. Suddenly, the biggest mosquito I’ve ever seen lands on my arm. Stifling thoughts of what ominous leaked substances might have swelled it to such gigantic proportions, I squash it.

“Wow, that was a huge mozzie,” says Dr Greg Storr, general manager of reactor operations for the Australian Nuclear Science and Technology Organisation (ANSTO) at Lucas Heights. I laugh nervously and check the radioactivity counter bolted to the wall. The reading is normal. For now.

Thoughts of mutant insects, Three Mile Island and Dr Strangelove are pushed aside as ANSTO’s media adviser, Sharon Kelly, assures me that I am perfectly safe. “You’re probably experiencing less radioactivity in this room than if you lived in the Blue Mountains because of all the granite rock up there.” Which is comforting for me but perhaps less so for the good folk of Katoomba or Blackheath.

Like any whiz-bang scientific facility, the reactor bears a nifty acronym, OPAL, which stands for Open Pool Australian Lightwater Reactor. It’s brand-new – built by an Argentine company called INVAP – and due to officially open on April 18, when it will replace its ageing, Menzies-era predecessor, known as HIFAR (High Flux Australian Reactor).

The two reactors are within sight of each other at Lucas Heights, a sprawling complex of office buildings, car parks and, incongruously, a wire enclosure full of kangaroos. “Don’t worry,” says Kelly. “We don’t do horrible tests on them – they’re orphans brought in by [wildlife rescue group] WIRES.”

As befits a facility that cost $400 million to build and has allegedly been singled out as a terrorist target, security is tight. Identification cards are checked by Australian Federal Police officers and on top of the reactor building is a galvanized steel latticework structure designed to withstand the impact of a commercial airliner.

Equipped with EPDs – electronic personal dosimeters that measure radioactivity – and clad in geeky yellow coats, we pass through a decompression chamber and enter the reactor room. Brightly lit and cavernous, it is strangely quiet. The reactor core, fuelled by 30 kilograms of uranium, lies at the bottom of a 13-metre-deep pool, eerily lit in a fetching shade of cobalt. It’s so clear that one can see right to the bottom and it looks strangely inviting. “We wouldn’t advise going for a swim,” quips Storr. “It’s pretty hot in there.”

Steel walkways, endless metal pipes and aircraft-hangar proportions give the reactor room the look of a James Bond set. But OPAL is a research reactor – it doesn’t generate any electricity, instead producing radiopharmaceuticals for use in the treatment of illnesses such as cancer and arthritis, radioisotopes and neutron beams for scientific and commercial use. “Basically, it’s a neutron factory and the neutrons are captured by the reflector vessel, which is a big complicated doughnut-shaped structure,” explains Storr.
Doughnuts are absent from the control room, where engineer Peter Winks is doing a poor impression of Homer Simpson. Homer jokes go with the turf for the 80 staff. “We had a letter once from a guy applying to be the new reactor manager,” says Storr. “It started off seriously enough. Then he said he’d had a lot of experience in a place called Springfield and that a bloke called Smithers could put in a good word for him. He didn’t get an interview.” Free public tours of the ANSTO facility are held on the first and third Saturdays of every month. Phone: 9717 3111.