

# **BlueGreen Power Technologies Pty Ltd**

ABN: 58 143 604 979

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## **Re: Step Back Nuclear Reactor**

The Step Back Reactor uses low-grade fuel rods as opposed to high-grade rods which overreact when they lose their cooling system.

The low-grade fuel rods are enriched enough to heat up, without water present, to a level that does not cause a meltdown or smoking, therefore not contaminating the environment around the plant if the cooling system fails. Being low-grade, the fuel rods will be larger in size than high-grade rods, lowering costs to enrich the rods for this type of plant.

The Step Back Reactor uses low-grade fuel rods that heat water in a boiler to make low pressure steam which subsequently goes into a small turbine that powers a small generator. This, in turn, heats up electrical coils that are placed in or beside the low-grade fuel rods, therefore making the fuel rods react at a higher output. The small generator is matched in size for this purpose so as not to overheat the low-grade fuel rods. The water is then hot enough to run a larger turbine on high pressure which can power a larger generator for electricity.

Yours faithfully

David Ide  
Managing Director

**Re: Step Back Nuclear Reactor**

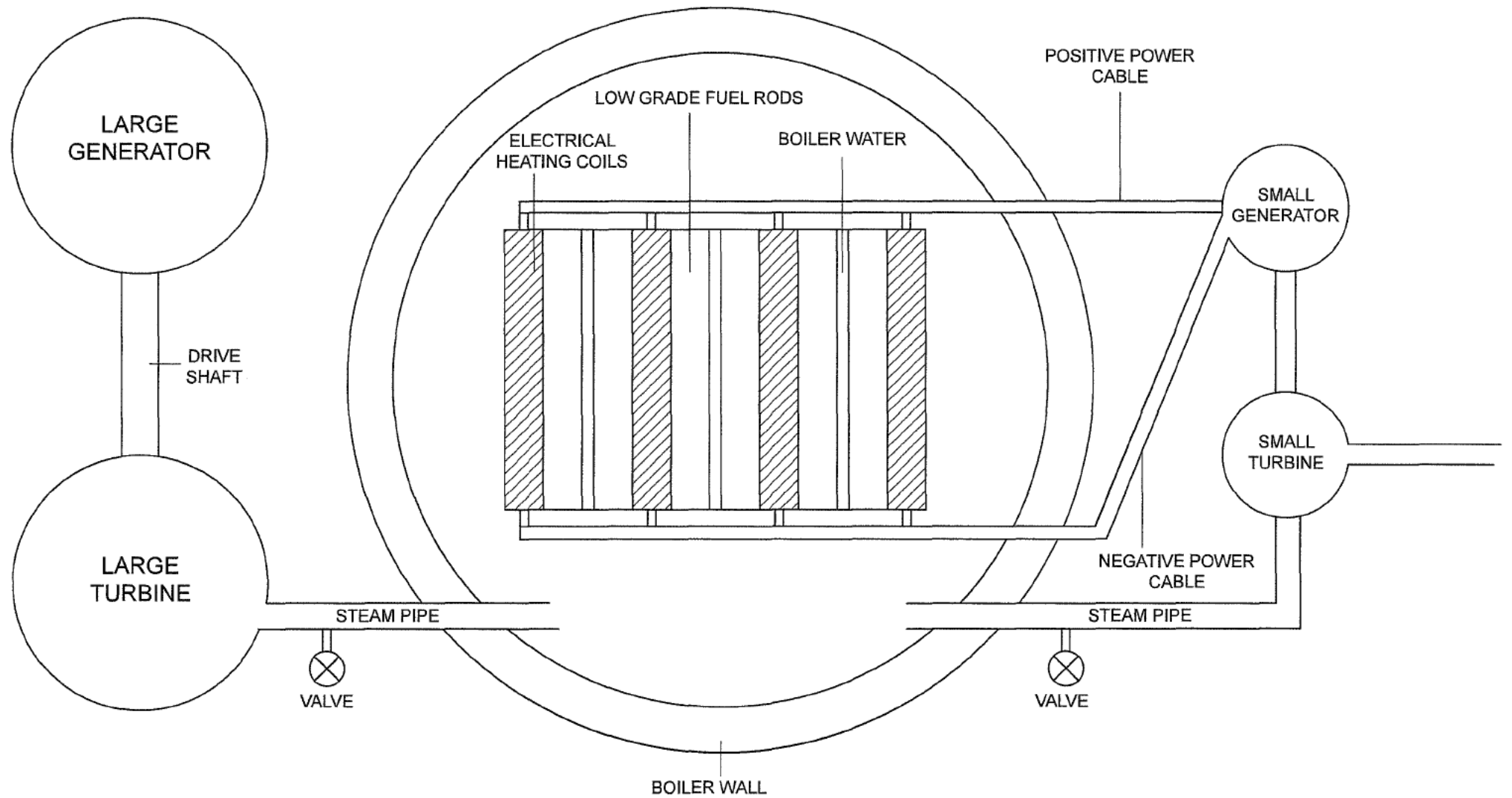
Safety systems for low-grade fuel rods:

- Shut off valves on the steam line pipes that power a small turbine. If there is over-temperature, this will stop the small generator operating.
- Electric temperature switches that stop the electrical current going from the small generator to the heating coils if there is over-temperature in the reactor fuel rods.
- Heat melt fuses on the electrical cables that connect to the electrical heating coils. If these melt due to overheating, this will cause the shutdown of electricity to the heat coils. These heat melt fuses can also release liquid and gas nitrogen through pipes that pass the fuel rods in order to cool them. They are connected to larger vacuum tanks than the supply tank to speed the flow of nitrogen. These heat melt fuses are set to a point below meltdown temperature.
- Last line of defence: A manual shutdown system.

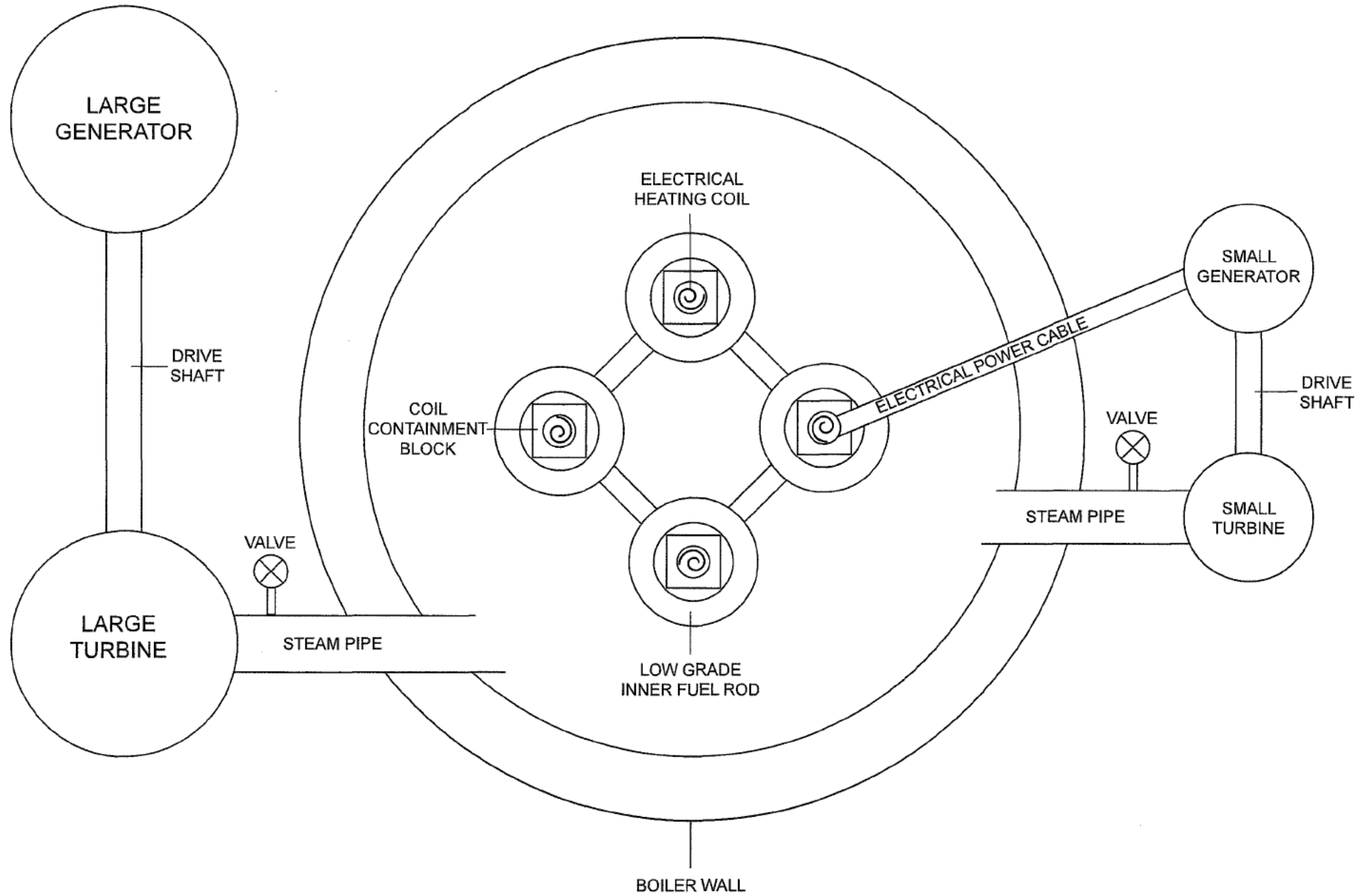
The Step Back Reactor should be linked to GPS satellites. If the planet has a tilt or shift on rotation (which could happen without warning) causing earthquakes, this will reduce major outage damage to the plant if it is shutdown before the earthquake occurs. There may be ten to thirty minutes warning, or little, or none. This time warning should be present because more damage is likely to occur at the end of a tilt rather than the beginning: it should start slowly, if it happens.

Yours faithfully

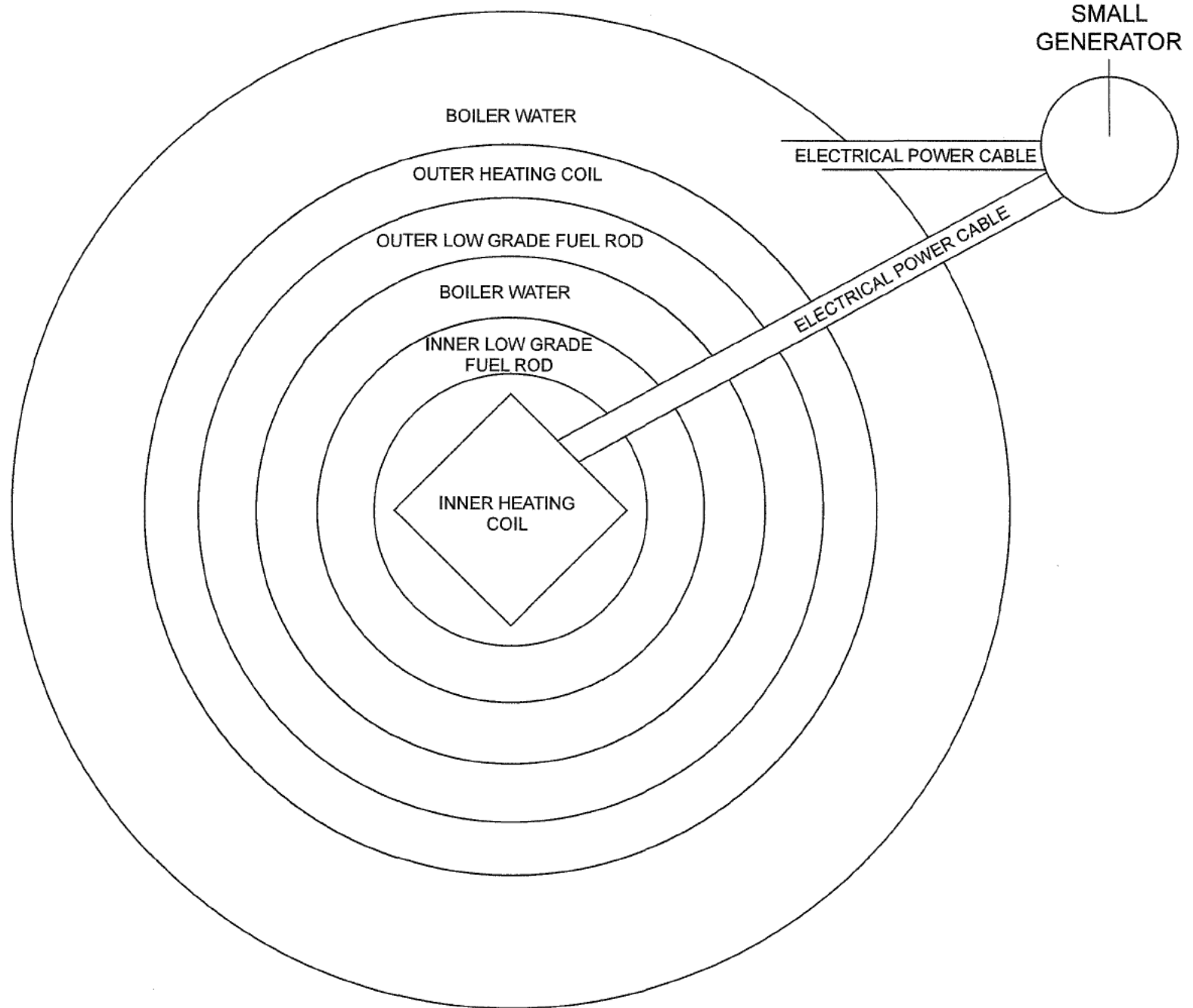
# STEP BACK NUCLEAR REACTOR



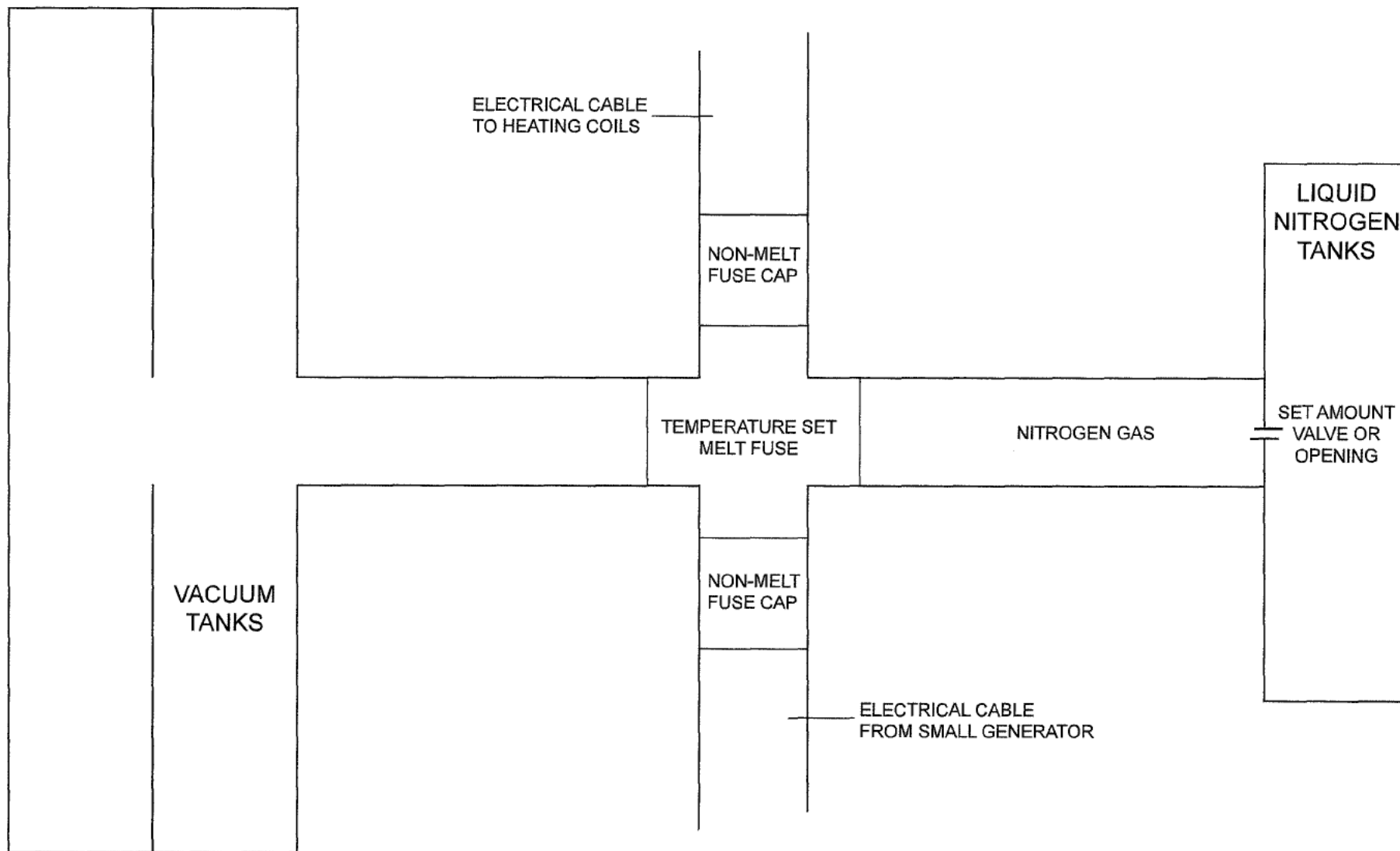
# STEP BACK NUCLEAR REACTOR



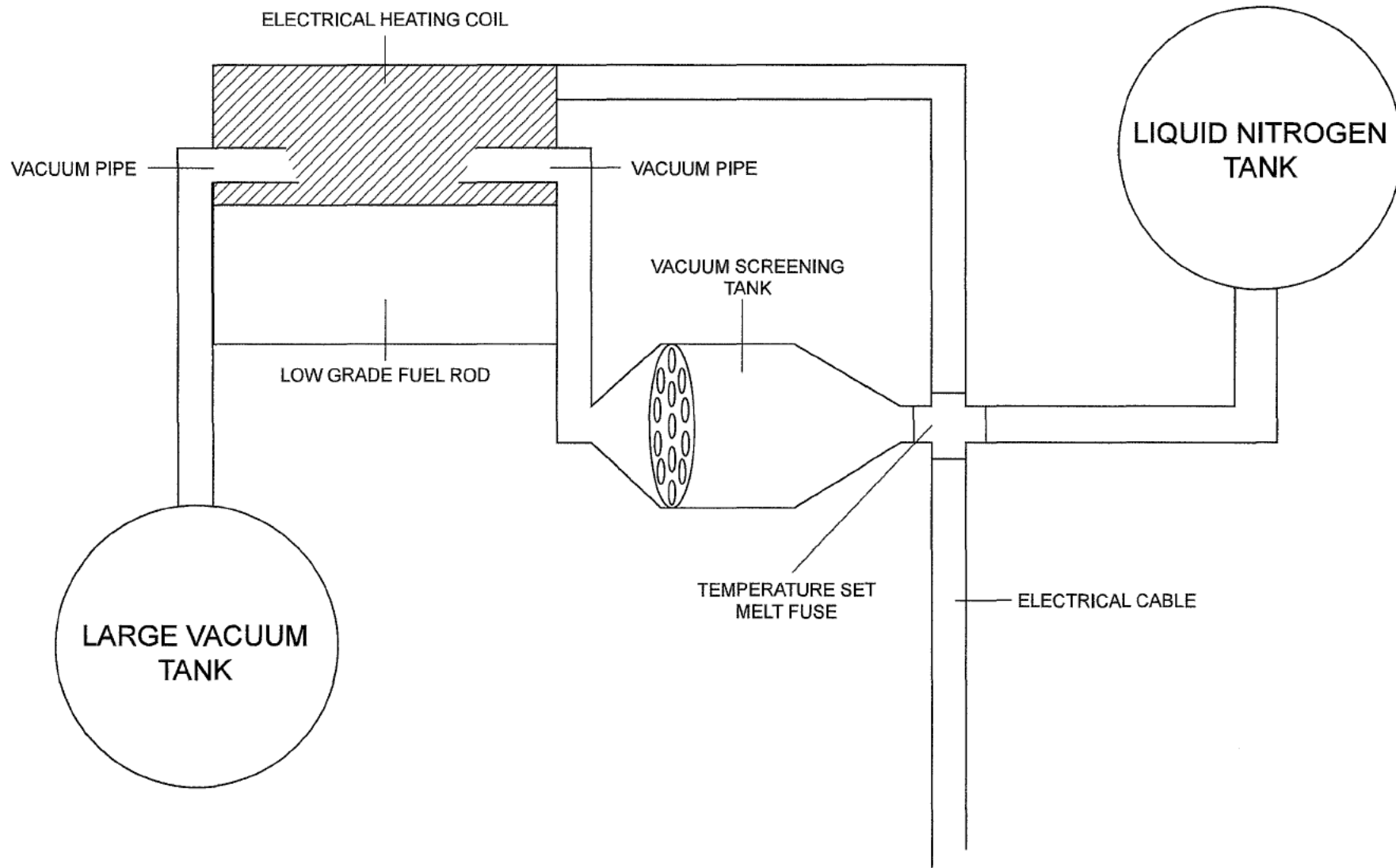
# STEP BACK NUCLEAR REACTOR



# STEP BACK REACTOR ELECTRICAL HEATING COIL FUSE



# TEMPERATURE MELT FUSE COOLING NITROGEN TANK ARRANGEMENT



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## **Background – Company Profile/Reasons**

When I do a design, it is normally worded by a Patent Attorney (I use Collison and Co) but at a high cost. My small company is on low funding from a small, one truck transport business which I run. Capitalisation of the company has been too small to receive any grants in the past, however the projects I want to do are possibly Australian Industrial secrets which will not qualify for funding due to access rights.

So far I have spent over \$600 on the design of the Step Back Nuclear Reactor ie, CAD, letters and meetings. If I had done this as a Provisional Patent it would be around \$3500, but then it would not be able to be tabled at the Royal Commission without undoing it.

The cost of this design will also be too high for the Australian Government to do on its own, but it could be tabled for consideration to overseas governments (that still use nuclear power) to fund a joint venture company. This way other countries could have access to configuration of the design once it is blueprinted, so they should have a safer design on their land in the future.