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RADIATION RISKS

and Nuclear Power in Scotland

**SCOTTISH CAMPAIGN FOR
NUCLEAR DISARMAMENT**

Written by Lynn Jamieson with input
from members of the Risks of
Radiation Working Group

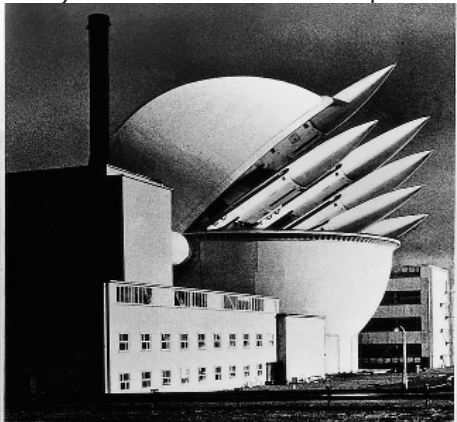
Scottish CND (SCND) has always recognised the strong links between nuclear power and nuclear weapons. In addition to these dangers, civil nuclear power brings with it radiation risks and the long-term problems of nuclear waste.

Whether for or against, everyone living in Scotland should be informed about the dangers of nuclear power. SCND's Radiation Risks working group believes that the health and safety problems of civil nuclear power have always been underplayed and that Scotland's very old nuclear power stations now pose added risks.

As in the rest of the UK, the nuclear power stations in Scotland, at Torness (East Lothian) and Hunterston B (North Ayrshire), are Advanced Gas-Cooled Reactors (AGRs) owned and run by EDF Energy, a wholly-owned subsidiary of Électricité de France in Paris, France.

Every time an AGR nuclear power

station is refuelled, about once a year, a spike of invisible radioactive gases is released at levels that are dangerous to people living immediately downwind, particularly to babies, children and pregnant women. A pattern of evidence world-wide indicates increase leukaemia risks near nuclear power plants. The largest study published is German (see Kaatsch and colleagues, 2008¹) and clearly showed infants and children living within five kilometres of nuclear power plants were particularly at risk. Data on spikes in emissions were not available to this study as it was published before a German government minister demanded hourly emission data. The hazardous spikes of emissions at refuelling were then revealed and are further discussed by Ian Fairlie in 2014 as the likely cause of leukaemia².



Graphic by Peter Kennard

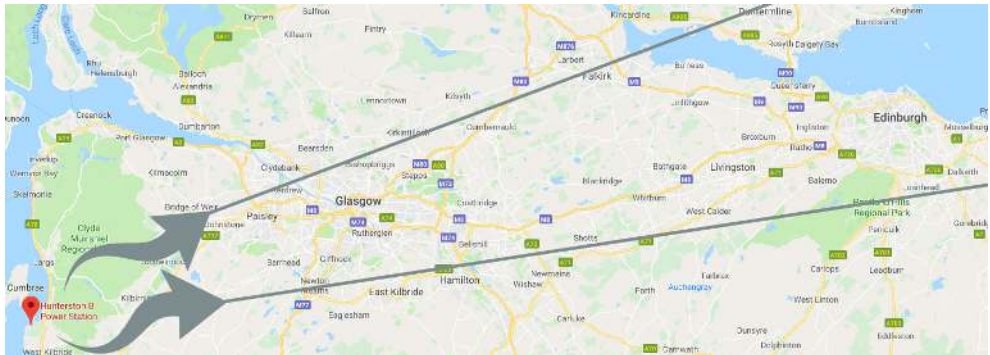
Hunterston B began generating electricity in 1976, so at 43 years old in 2019, it is one of the oldest power stations in Europe. Both its nuclear reactors, termed R3 and R4, have been shut for safety reasons since March and October

2018 respectively, while a safety review takes place. EDF hopes to extend Hunterston B to 2023. Torness began in 1998 and is due to close in 2023 (already a longer operational life than originally anticipated) but EDF want to extend this date to 2030. Only Torness is currently generating nuclear energy.

In all AGR's nuclear fuel sits within a structure of interlocking graphite barrels whose stability is essential for safe operation. Cracks in this graphite are a known problem and these increase with ageing. Recent inspections show more extensive cracking than had been anticipated, particularly in R3, raising serious questions about their safety. The Office of Nuclear Regulation is looking at evidence provided by EDF. The ONR has the power to decide whether it is safe to restart either reactor. Scottish CND believes both R3 and R4 at Hunterston should be permanently closed now.

The Scottish Government's current official policy is to extend the life of Torness and Hunterston B "providing that strict environment and safety criteria continue to be met.". However, the increasing number of graphite cracks, and particularly their increased widths and the growing number of multiple cracked graphite barrels put safety further in doubt. If there ever were to be a nuclear accident at Hunterston, the prevailing winds would take the radioactive plumes towards Glasgow and Edinburgh (see map below).

The Scottish Government's website explains its support for extended the lives of nuclear power stations in terms of ensuring electricity supply while other sources of power are developed, but this is a weak and out-of-date rationale. One winter has already gone by without any power from Hunterston B. In fact, because of nuclear power, Scotland's wind





Hunterston B in North Ayrshire

farms have often had to switched off- as the grid cannot cope with more electricity than people are using.

It is unsafe to continually switch nuclear power stations on and off to match electricity demand. But Scotland has now reached a tipping point where almost all of our electricity can be generated from hydro-electric, wind, wave and solar sources. In fact, nuclear electricity is now an expensive disincentive to new, cheaper, electricity generation and is a waste of the existing capacities of the renewable technologies. Nuclear electricity may be said to be carbon neutral when it is being generated but only because the uranium mining, plant construction, decommissioning and long-term management of nuclear waste are left out of the equation, along with the unique risks of this industry.

Thankfully, the Scottish Government is opposed to building new nuclear stations. Its website states *“nuclear power represents poor value for consumers. This is clear from the contract awarded by the UK Government to Hinkley Point C nuclear station in Somerset, which will result in energy consumers subsidising its operation until 2060.”*

Scotland has three civil/military nuclear sites at advanced stages of decommissioning (Dounreay in Caithness, Chapelcross in Dumfries, and Hunterston A in North Ayrshire). Dounreay shows that decommissioning in fact involves more jobs than generating nuclear power. Decommissioning should be recognised as a worthwhile industry in which Scotland could take a leading role.

Actions you might wish to take:

1. Write (with copies to social media) to the following people:

- the Chief Inspector of the Office of Nuclear Regulation (ONR),
- the Chief Executive of the Scottish Environmental Protection Agency (SEPA),
- your own MSP and the current Scottish Minister for Energy (if the latter, you may wish to add that you disagree with the Scottish Government's flimsy arguments for extending the lives of nuclear power stations.)
- the Scottish Government's Director of Energy and Climate Change

In writing to the above and in using social media, you might express the views that:

- the Hunterston B reactors should remain closed for good
- that Torness should be required to publish hourly data on their radioactive gas emissions, in a format that would make clear the large spikes that occur at the time of refuelling;

- if any Hunterston reactor were to be restarted, you might add that EDF and North Ayrshire Council should publish their plans for evacuation in the event of a nuclear accident; and

- that free potassium iodate tablets should be pre-distributed to the population within 50km of Hunterston B

2. Consider planning, organising and participating in demonstrations outside civil nuclear power stations.

3. Vote for political parties which oppose new nuclear power and which oppose extending the lives of existing nuclear reactors.

4. Join the mailing list of the excellent blog maintained by Pete Roche in Edinburgh <http://www.no2nuclearpower.org.uk/>

5. Join the mailing list of the Radiation Risks working group - email L.Jamieson@ed.ac.uk with Hunterston in the heading.

Further Reading

1. Kaatsch, Peter, Claudia Spix, Renate Schulze-Rath, Sven Schmiedel and Maria Blettner. 2008. "Leukaemia in Young Children Living in the Vicinity of German Nuclear Power Plants." *International Journal of Cancer* 122(4):721-26.

<https://www.ianfairlie.org/news/childhood-leukemias-near-nuclear-power-new-article>

2. Fairlie, Ian. 2014. "A Hypothesis to Explain Childhood Cancers near Nuclear Power Plants." *Journal of environmental radioactivity* 133:10-17.

<https://www.ianfairlie.org/news/why-hunterston-b-nuclear-power-station-should-not-be-restarted/>

'Radiation Risks and Nuclear Power in Scotland' was written by Lynn Jamieson with input from members of the Risks of Radiation working group, part of Scottish CND.

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or use the online form: [http://](http://www.onr.org.uk/complaining-about-onr.html)

www.onr.org.uk/complaining-about-onr.html

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Castle Business Park

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or use the online form: [https://](https://www.sepa.org.uk/contact/contact-us-via-email/)

www.sepa.org.uk/contact/contact-us-via-email/

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[https://our.east-ayrshire.gov.uk/](https://our.east-ayrshire.gov.uk/AchieveForms)

AchieveForms



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AND NUCLEAR POWER IN SCOTLAND

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