

Responses to written questions from Senator Cox

What do you make of the part of the Agreement that indemnifies the UK and US against “any liability, loss, costs, damage, or injury arising out of, related to, or resulting from nuclear risks” associated with the AUKUS project?

According to definitions in the Treaty, “Nuclear Risks” means those risks attributable to the radioactive, toxic, explosive, or other hazardous properties of Material. These are the normal risks of any activity in facilities dealing with radioactive materials and radiation. If Australia is the operator of the submarine than it is reasonable that Australia is responsible for nuclear and other risks.

If nuclear powered submarines do not pose a “nuclear risk”, as your organisation claims, why would this clause be necessary?

The ANA has no claims about whether nuclear powered submarines pose a “nuclear risk” because of the ambiguity about what the term “nuclear risk” means. International experience demonstrates that well-managed nuclear facilities under appropriate regulations are very safe and the nuclear and other risks are very low.

Does your organisation hope that industrial activity associated with AUKUS will promote a civilian nuclear industry in Australia? If so, how are the two types of industry related?

We do not see AUKUS promoting a civilian nuclear energy industry, but the build-up of nuclear expertise in Australia will be beneficial if nuclear energy plants are built in Australia. The nuclear powered submarines are powered by small pressurised water reactors which are similar to the most common technology used in most power reactors used around the world. There are differences, a submarine reactors is more compact than power reactors and the AUKUS submarines use highly enriched uranium whereas power reactors use low enrichment fuels.

What are the latest best-practice procedures for the disposal of nuclear waste?

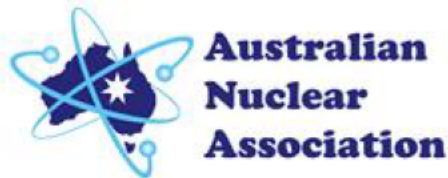
Nuclear powered submarines produce several types of radioactive waste: lower level radioactive waste from operations and maintenance and spent nuclear fuel at the end of the submarine service life. Australia already manages low and intermediate level waste from the operation of reactors at Lucas Heights, the use of radioactivity in medicine and industry, and naturally occurring radioactive materials. Spent fuel from nuclear power reactors contains high level radioactivity and best practice is to store for a tens of year in an engineered shielded cask to allow most of the radioactivity to decay. The option then is to reprocess the fuel to recover the unburnt uranium and plutonium or to dispose the spent fuel in long-lived in deep geologic facilities.

According to your understanding, what methods will be employed to dispose of the nuclear waste associated with AUKUS?

The ASA should be asked what method will be employed to dispose of nuclear waste associated with AUKUS. I can only answer in general terms. The high level enrichment of uranium still in spent fuel from submarine reactors makes it more likely that the spent fuel after being stored for tens of years will be processed to recover the remaining enriched uranium. Other radioactive materials in the spent fuel could then be encapsulated in a solid matrix, e.g. glass or synroc, and disposed of in a regulated and engineered geological facility.

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