

Submission to the Department for Business, Energy and Industrial Strategy consultation on the draft Nuclear Safeguards Regulations

14 September 2018

The Institute of Physics welcomes the opportunity to contribute to the proposed regulations for a new domestic nuclear safeguards regime following the UK's withdrawal from the European Atomic Energy Community (Euratom).

1. Issues raised in the consultation document

Introduction

Practical work is central to the teaching of physics at A-level and GCSE, and experiments involving radioactive sources make up an important component of this. Ofqual conditions and requirements¹ for the practical science assessment component of A-level physics ('practical endorsement') include the use of ionising radiation as one of the 12 core techniques that students should have the opportunity to perform. At GCSE, in learning about ionising radiations and nuclear decay, students should be able to observe the associated phenomena to aid their understanding of the physical world.

The IOP welcomes the commitment from BEIS to ensure that the required Nuclear Safeguards Regulations are in place when the UK leaves Euratom. However, the regulations as they stand will prevent schools from using small amounts of uranium, thorium and plutonium for practical science teaching. This will have a detrimental effect on physics education which can be avoided.

Current process for schools holding radioactive sources

Schools are currently exempt from reporting their nuclear material annually to Euratom under a Memorandum of Understanding agreed between the Health and Safety Executive (HSE) Safeguards office and CLEAPPS.

In order to comply with the Ionising Radiations Regulations 2017, schools need to notify, register or obtain consent from the HSE before working with radioactive sources.² CLEAPPS provide guidance on making the application and recommend that a science teacher has attended a course on ionising radiations to enable them to provide appropriate training to other employees. The application costs £25. Schools also have a distinct 'radiation protection supervisor (RPS) (schools)' in place, and they will also have a nominated 'radiation protection advisor' (RPA).

Proposed process for schools holding radioactive sources

¹ Ofqual, 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/526286/gce-subject-level-conditions-and-requirements-for-science.pdf

² HSE, 2018. <http://www.hse.gov.uk/radiation/ionising/index.htm>

The draft regulations classify schools which handle any qualifying nuclear material as a Qualifying Nuclear Facility. Schools will be able to apply to be a 'Qualifying Nuclear Facility with limited operation' which will give them a part exemption from reporting to the Office for Nuclear Regulation. However, this status will still require schools to apply for derogations and make yearly inventory returns. This may have cost implications, as well as adding a disproportionate level of bureaucracy. It could potentially require instrumentation and expertise that schools do not have.

If the draft regulations are implemented as drafted, we understand and that CLEAPPS, who advise schools on practical science, will recommend that schools dispose of the sources, due to the additional level of reporting required under the new regulations, as well as potential additional cost implications. This will prevent GCSE students from observing the phenomena that they should have done, and will prevent A-level physics students from properly demonstrating all of the practical skills listed in the Subject Level Conditions referenced above.

Recommended process

We ask that the regulation is amended to replicate the current process whereby schools only need to register with HSE, ensure an appropriate RPS (schools) and RPA are in place, and undertake training to handle their small amounts of radioactive sources.

Schools should be exempt from other reporting, as per the current arrangement for Euratom regulations through the aforementioned MOU. As these Nuclear Safeguards Regulations will be replacing the current Euratom regulations, there is no reason why schools should not continue to receive a specific exemption as currently.

We believe this is proportionate to the risk of schools using small amounts of nuclear material and will be essential to enable schools to be able to continue to use them to teach the physics curriculum at both GCSE and A-level.

About the Institute of Physics

The Institute of Physics is the professional body and learned society for physics in the UK and Ireland, inspiring people to develop their knowledge, understanding and enjoyment of physics.

We work with a range of partners to support and develop the teaching of physics in schools; we encourage innovation, growth and productivity in business including addressing significant skills shortages; and we provide evidence-based advice and support to governments across the UK and in Ireland.

Our members come from across the physics community whether in industry, academia, the classroom, technician roles or in training programmes as an apprentice or a student. However our reach goes well beyond our membership to all who have an interest in physics and the contribution it makes to our culture, our society and the economy.

We are a world-leading science publisher and we are proud to be a trusted and valued voice for the physics community.

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