Call for Proposals
Academic User Access 2022

National Nuclear Laboratory Limited (“NNL”) would like to invite proposals from university academics for user access over a period of up to 3 months to a range of equipment in NNL facilities focussing on research and development associated with the UK **Nuclear Decommissioning Authority’s mission**. The call is open from 12th September - 7th October 2022 for experiments performed in the period November 2022 to March 2023. The facilities and equipment available are detailed on pages 45 – 69 of the NIRO UK Nuclear Fission R&D Catalogue. This call is sponsored by the NDA with additional funding provided by NNL, NNUF and Royce. The call will cover access costs that are not already covered by existing funding available to the academic - including facility and equipment usage and experimental supervision (see Notes for Clarification). Full details of the opportunity are provided below.

*Please note that Call Schedule dates are all subject to the condition that any planned access must be possible within any Government imposed restrictions on work or travel, any imposed restrictions by the Site licensor and within any operating procedures put in place by NNL to ensure the continued safety, security and health of our workforce and any other visitors to our facilities.*

**National Nuclear Laboratory**

The National Nuclear Laboratory (NNL) is a UK government owned and operated nuclear services technology provider covering the whole of the nuclear fuel cycle. Established in 2008, NNL brought together the UK’s nuclear research and development capability into one organisation. Our workforce represents a combined 10,000 years of expertise in nuclear science and technology. We are pioneers, innovators and experts in our field. We work globally at the forefront of nuclear science, providing knowledge, technology and access to cutting-edge facilities to partners and customers.

NNL facilitates academic research on irradiated and nuclear materials. We provide equipment, facilities and associated expertise to process and analyse materials, particularly those that are too radioactive for university laboratories including materials that can only be handled on nuclear licensed sites.

NNL is committed to facilitating access to our unique facilities and equipment. As a national laboratory we strive to deliver world leading science in the UK and collaboration with university partners is critical to this mission. The call process is a tested approach to enhance and streamline user access to relevant equipment and facilities at NNL. The NNL User Access Team provides a single point of entry into NNL facilities (access.liaison@uknnl.com).

This user access call provides academics with an opportunity to apply to use equipment situated primarily in our active laboratories on the Sellafield and Westinghouse sites.

**The Nuclear Decommissioning Authority (NDA)**

The Nuclear Decommissioning Authority’s mission to clean up the UK’s civil nuclear legacy will take over a hundred years to complete. NDA maintains a programme of high-level academic research to ensure that we have a national capability with sufficient and appropriate skills to be the future technical leaders in the decommissioning field. Over the last decade, we have sponsored >100 PhD and postdoctoral research projects at UK universities with the majority of our students taking up employment that contributes directly to nuclear decommissioning upon completion of their studies.

Whilst many academic researchers get some experience of working with radioactive sources or radiation generating equipment as part of their studies, working with active materials on nuclear sites is a unique challenge. Gaining first-hand experience of this challenge is very helpful in developing a researcher’s skill set to increase their employability and to prepare them for a career of working in or with the decommissioning industry.

To make this experience more accessible, the NDA are offering financial support to UK academic researchers who would like to access the UK National Nuclear Laboratory’s active**\*** facilities to undertake practical research relevant to the NDA’s mission. The NDA Strategy[[1]](#endnote-1) sets out our remit and overall approach to decommissioning the civil nuclear legacy, and documents such as our 5 year Research and Development plan[[2]](#endnote-2) and Mission Progress Report[[3]](#endnote-3) add detail to our challenge areas.

Researchers applying for this support do not have to be directly funded by NDA or one of our subsidiaries but must be UK based and be able to demonstrate the relevance of the proposed active**\*** work to the NDA’s mission.

**Call Details**

**Eligibility** – Applicants must be from a UK university. Their proposed active**\*** research activity must be relevant to the NDA’s mission. For example, proposals that focus on future reactor fuel development or fusion components would not be eligible – if in doubt, please contact rick.short@nda.gov.uk or ed.j.butcher@uknnl.com to discuss. Researchers who are funded by the TRANSCEND consortium should **not** apply via this call – please contact rick.short@nda.gov.uk.

**NOTE I**: All FY22/23 NDA bursary programme proposals for facility access must apply via this Call.
**NOTE II**: The proposed work must be completed no later than the end of March 2023 but the Panel will consider proposed extensions and longer duration projects for FY23/24 to start no earlier than April 2023. However, no guarantee will be given for this future spend until April 2023.
**NOTE III**: Primarily, this call covers access to active**\*** facilities and equipment.

However:
**\***access to non-active equipment and facilities will be considered if it is an essential pre-cursor to future active work.

**Available Equipment –** This call includes access to radioactive samples as well as NNL facilities, equipment and capabilities detailed on pages 45-69 of the UK Fission R&D Catalogue [[4]](#endnote-4) and both NNUF[[5]](#endnote-5) and Royce[[6]](#endnote-6) websites. NNL contact names and details are included.

**NOTE IV:** Some proposals may not be technically or operationally feasible in the timescale available due to limited equipment availability or additional safety case requirements. See **NOTE II**.

**Modes of User Access**

Recognising the nature of performing experimental work on radioactive materials on a nuclear licensed site we have three modes of access to the NNL equipment under this call. Users should consider carefully which is the most suitable and timely mode of access to apply for.

1. **‘Postal Service’ -** Samples are provided to NNL and analysis is performed by NNL staff
2. **‘Hands in Pockets’ -** Samples are provided to NNL for analysis which is performed by NNL with the academic present to direct the work within the agreed scope**\*\***
3. **‘Hands On’ –** Work performed by the academic under NNL supervision**\*\***

*\*\*Access in**Modes (II) and (III) requires you to undergo* ***security clearance. This takes time so the formal process must be started as soon as successful applications are identified****. “To obtain SC (Security Check) clearance you need a minimum of 5 years UK residency. The process includes a background check so you need to be willing to undertake this. Also, references are needed so you should get agreement from the referees you intend to elect that they are willing to provide a reference. Firstly, a BPSS (Baseline Personnel Security Standard) clearance is required that will include a check that any required ‘Right to Work’ documentation is in place. Any periods of travel in any one country for 6 months, broken or unbroken during 3 years would also be included in this clearance process and a Police Certificate obtained which would also be sent to ONR as part of the SC process. The SC clearance process also includes a criminal record check, check of credit and financial history and it may also include an interview. More information on the security vetting process can be found on* [*https://www.gov.uk/government/organisations/united-kingdom-security-vetting*](https://www.gov.uk/government/organisations/united-kingdom-security-vetting) *and you are advised to consult this.”*

**Application Process –** To be considered for user access in this call, academics are required to submit a proposal outlining their proposed experiments using the template provided. All submissions will be assessed by a panel of the call funders including the NDA, NNL, NNUF and Royce. Feedback will be provided for all submissions, whether successful or not.

**Proposals will be assessed by the panel based on the “Assessment Criteria” provided below**

*Whilst there is a limit to the user access that will be granted under this call, it is anticipated that future calls will follow.*

Successful applicants will be notified by NNL and will be asked to enter into an agreement with NNL and the NDA setting out the nature of the experiments and the terms relating to such access to the facilities i.e. behaviours, confidentiality, IP, costs (“the Agreement”) etc. Successful applicants will then work closely with NNL to prepare for the experiments and undergo relevant training and security clearance (where necessary under the relevant site licence).

Scheduling of the User Access ‘time’ will then be agreed by the NNL User Access Leader with the academic. The NNL Equipment Lead Scientist will work closely with the academic and supervise the experiments, subsequent analysis and support them in preparation of scientific publications for peer reviewed journals.

It is a requirement of any granted access that a short case study is prepared jointly, which may be used to publicise the value and support subsequent user access calls.

**Notes for clarification**

The costs for supervising the experiments and equipment usage will be covered by this FY2022/23 call. Details of the Agreement will be made available to the successful applicants. However, for guidance these costs could include:

* security clearance**\***
* drugs and alcohol testing**\***
* training courses**\***
* NNL support in the translation of the experimental requirements to enable production and approval of the written schemes of work to permission the experiment
* support completing the required access forms**\***
* NNL operator to perform the experiment
* NNL supervision**\***
* support from NNL scientists on the publication of co-authored posters and production of experimental reports
* transportation of samples to the NNL facility
* travel expenses**\***
* accommodation**\***

**\***for projects that include attendance at NNL

**The call will not cover** any form of salary or payment for the work performed by the academic team.

See Table 1 later in this document for completion.

**Schedule**

|  |  |  |
| --- | --- | --- |
| **Date** | **Activity** | **Notes** |
| 12th September | Call Opens | Briefing webinar will be held on September 22nd (10.00AM)Register your interest at: access.liaison@uknnl.com |
| September 2022 | Proposal preparation period for academics  | Dialogue between the academic and the NNL Lead Equipment Scientist to test the technical and operational feasibility of the proposal within the defined timescales. |
| 7th October 2022 (23:59) | Call Closes |  |
| 17-21st October 2022 | Panel Assessment of the proposals | A panel review of all proposals is planned to be held during the week 17-21st October. |
| 24th-28th October 2022 | Notification of the Panel decisions  | Applicants will be notified of the Panel’s decisions. Feedback will follow.Successful applicants will receive contract paperwork that includes additional details to be completed by the applicant. |
|  | Security Clearance Process  | The level and duration of this varies based on the type of access requested and individual circumstances but it is a **rate limiting step for access** (average of 4-6 weeks for non-active and Preston Lab; 3 months for areas of Central and Windscale Labs) so must be initiated for successful applicants immediately. NNL will advise successful applicants of the requirements. |
|  | Preparation and planning for experiments and access | This will require further discussion between NNL and successful applicants. |
| November 2022 – March 2023 \*\*\* | User Access for ‘Postal’ experiments | The specific timing of user access will be notified by NNL User Access Leader noting maximum duration of 3 months. |
| December 2022 – March 2023\*\*\* | User Access for ‘Hands in Pockets’ and ‘Hands On’ experiments | The specific timing of user access will be notified by the NNL User Access Leader and is subject to security approval. Note maximum duration of 3 months. |

\*\* The schedule of this call is subject to potential change and/or enduring restrictions arising from any further COVID-19 or other pandemic response.

Proposal Submission - Academic User Access 2022 Call

To be completed by the applicant with assistance from NNL technical team.

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| --- | --- | --- |
| Applicant detailsTo be completed by the applicant with assistance from NNL technical team | Title |  |
| Full Name |  |
| Institution | Only UK universities are eligible |
| Email contact address |  |
| Phone number(s) |  |
| Contact postal address |  |
| Title of the research project to which this active proposal relates | It is expected that proposals will form part of an ongoing PhD or PDRA research project |
| Funding provider for the above research project | e.g. University, EPSRC, Industry, Nuclear Site Licence Company, NDA, Regulators If industry, please provide contact details for the industry sponsor  |
| Progress to date for above research project | e.g. 50% of PhD project completed to date |
| University Contract’s Office contact for this proposal | Name and email address of University Contract’s Office contact with whom the Call and associated contract requirements including turnaround timescales have been discussed |
| NNL contact(s) for this proposal | Name and email address of NNL technical lead with whom the active facilities proposal has been discussed/developed |
|  |  |  |
| Title of the proposed active research activity |  |
| Brief description of the work to be undertaken | This should be at a high level suitable for a general audience – not deep technical detail (200 words) |
| Detailed technical scope | Should specify the technical work that will be undertaken in the active area (500 words) |
| Sample requirements | Sample details including activity, location, owner, contact details |
|  |
|  | **Facility** | **Type of Access** | **Rental requirements (Hours) and Any Existing Cost Provider(s)r** |
| Facility (or facilities) that will be required(Add rows as required) | Name of facility and NNL lab in which the facility is located | Hands on, Hands in pocket or remote | Number of facility hours that will be required and name(s) of NNL contact who verified the details. The applicant should complete this form listing any funding sources obtained by their research group for the project area to enable the Assessment Panel to understand financial requirements of and leveraging associated with the proposal  |
|  |
| Proposal Submission - Academic User Access 2022 Call CONTD. |
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| **Assessed Criteria** |

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| --- | --- |
| **Type of work** | Hands on/Hands in pockets/postal/active/non-activeThis category will count for 20% of the overall score in the assessment process. See Assessment Criteria category Type of Work below for guidance on how to complete this section |
| **Relevance to NDA mission** | This category will count for 35% of the overall score in the assessment process. See Assessment Criteria category Relevance to the NDA mission below for guidance on how to complete this section |
| **Skills and capabilities** | This category will count for 25% of the overall score in the assessment process. See Assessment Criteria category [Skills and Capabilities](file:///C%3A%5CUsers%5Camanda.kenway-jackso%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CSUIII3EG%5CNDA%20Call%20Scoring%20sheet%20for%20active%20facilities_EJB_akj.docx#skillsandcapabilities) below for guidance on how to complete this section |
| **Project management** | This category will count for 20% of the overall score in the assessment process. See Assessment Criteria category [Project management](file:///C%3A%5CUsers%5Camanda.kenway-jackso%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CSUIII3EG%5CNDA%20Call%20Scoring%20sheet%20for%20active%20facilities_EJB_akj.docx#projectmanagement) below for guidance on how to complete this section |

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| **Assessment Criteria** |

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| --- | --- |
| See Below  | **NOTE: Primarily, this call covers access to active\* facilities and equipment. However: \*access to non-active equipment and facilities will be considered if it is an essential pre-cursor to future active work.** |

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**Assessment Criteria**

| **Category** | **Ideal response will…** | **Assessment criteria** |
| --- | --- | --- |
| **Type of Work**20% of available score | The ideal proposal would provide the researcher with some practical experience of undertaking work with active materials on an industrial site | **(0) No Evidence or very poor** • The proposal does not involve working with active materials on a nuclear site **(1) Poor** • The work will be a postal sample (or samples) with the researcher not being involved in the preparation or undertaking of the work on the site **(2) Acceptable** • The work will be hands in pockets, with the researcher only observing work in an active lab on a nuclear site, but not being involved in the preparation **(3) Good** • The work will be hands in pockets, and the researcher is involved in preparing for and observing work in an active lab on a nuclear site **(4) Excellent** • The work will be hands-on, so the researcher will get the full experience of working in an active laboratory on a nuclear site |
| **Relevance to the** [**NDA mission**](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report-2021) **and associated** [**strategy**](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-strategy-effective-from-march-2021)35% of available score | • Refer to specific challenges on NDA sites that exist now or are likely to become issues in the future with examples from one or more NDA sites. • The response will describe the gap in the current understanding/knowledge base that the work will address and demonstrate understanding of the challenge and the sites/process/technologies it relates to. • Describe how the proposed research relates to those problems and will tackle them/increase understanding of them/contribute to or produce an alternative tool or technique for dealing with them. • Describe how the work is novel and/or builds upon previous work or experience of the supervisory team. Applicants who have not previously worked with the NDA or with partners supporting the NDA mission are advised to seek support from industry experts to help complete this section.  | **(0) No Evidence or very poor** • Response does not answer the specific question or provides no detail of how the active work relates to the [NDA’s mission](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report-2021) and associated [strategy](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-strategy-effective-from-march-2021).**(1) Poor** • The response does not clarify how this proposal is relevant to the [NDA’s mission](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report-2021) and associated [strategy](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-strategy-effective-from-march-2021)• The objectives are not stated or are unclear. • The response is unclear with respect to the methodology that is to be employed and/ or is unclear as to how the response builds on prior research. **(2) Acceptable** • The objectives of the project have been defined. • The response provides an explanation of how this is relevant to the NDA’s mission and associated [strategy](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-strategy-effective-from-march-2021), but may lack specific examples of where knowledge gained could be applied in support of an [NDA strategic outcome](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report-2021). • The response describes the methodology to be employed but may lack detail on why that methodology is appropriate and/or be unclear as to how the response builds on prior research. **(3) Good** • The proposed active research shows a clear link with a problem statement or challenge supporting a [strategic](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-strategy-effective-from-march-2021) outcome within the [NDA’s mission](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report-2021), building on prior research where appropriate. • The response provides some supporting evidence of how the research meets the challenge and/or includes credible examples of where the research could be applicable across the NDA group. **(4) Excellent** • The proposed research topic shows a strong connection with the [NDA strategy](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-strategy-effective-from-march-2021) and an existing or future research challenge and [NDA strategic outcome](https://www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report-2021) and shows insight into the decommissioning challenge that goes beyond that purely communicated in published materials from NDA. • The response makes clear the link to prior research, so the technical credibility of the research is soundly established. • The benefits of undertaking the active experiments are clearly defined with credible examples of application and how it will help the NDA to achieve its mission faster, cheaper or safer.  |
| **Skills and capabilities**25% of available score | • Identify the specific skill set that will be developed by the proposed work and demonstrate how & where that fits into the long-term NDA mission. • Demonstrate with evidence where there are now (or will in the future be) subject matter expert requirements in the field in which the researcher will be trained. • Identify “peripheral” skills/knowledge that will be developed during the research project and explain why these are now/will in the future be relevant to the decommissioning industry. • Show how skills will be developed/retained within the wider supervisory team. This might include the student, the Principal Investigator (PI), industrial supervisor and any other industry experts who will be engaged throughout the project. • Provide supporting evidence in the form of extracts from SLC T-BURD, NDA 5-year plan or other SLC document demonstrating the skills need.  | **(0) No Evidence or very poor** • The response provides no information as to how the research will fill an identified skills gap relevant to the NDA mission. **(1) Poor** • The response doesn’t get across the nature of the skills or capability that will be developed by the proposed PhD research project. • The response provides limited information of how the research will develop skills that can fill a gap identified within the NDA group. • No explanation of why an active research project is an appropriate way to develop the skills or how the wider supervisory team might benefit from this. **(2) Acceptable** • The response defines the specific skills and/or capabilities that will be maintained and/or developed during the research project. • A description is given as to why these skills are relevant to the NDA Group but may lack detail as to the existing or future need for the skills. • Some benefits of undertaking the skills development in the form of an active research project are described but may not be definitive. **(3) Good** • The response clearly defines the specific skills/capabilities that will be maintained and/or developed during the active research and the level to which it is expected the researcher will be elevated in their field. • The response provides a description, with at least one credible example, of how the research will develop skills which are linked to specific skills gaps across the NDA estate. • The proposal describes why an active research placement is an appropriate way to develop the defined skillsets and the benefits over alternative training routes. • The applicant gives some thought to how (at least some of) the skills/capabilities might be developed within the wider supervisory team. **(4) Excellent** • The response provides a detailed and explicitly defined description of the skills/capabilities that will be developed during the active research project. • The response defines, with credible supporting evidence, how the developed skills are linked to specific existing/future skills gaps across the NDA estate and may go beyond published information to define as-yet unidentified but credible skills and capabilities needs. • Peripheral skills that will be developed during the active research project are defined along with their relevance to the NDA mission. • An explanation is provided as to how the wider supervisory team’s skillsets would be developed. • The response considers at a high level how follow up research could increase the embedding of skills within the NDA estate. This could involve opportunities for commercial investment, innovation funding or SLC investment |
| **Project management**20% of available score | • Include a breakdown of costs/facility hours as per ***Table 1 - Funding requirements for active research projects***• Clearly define in the cost breakdown which elements you are seeking funding for, as part of this call and include confirmation of any existing funding sources being utilised noting that you can seek funding for all elements as part of this call).• Incorporate a project plan/Gantt chart showing the durations of the key phases of the work and identifying key milestones and deliverables. • Identify any additional input/time/resources that would be required from the NDA group to support or enable the project. • Identify any major risks to the project and associated mitigation that can be considered against these risks. • Demonstrate value for money for any ‘large ticket’ items required to deliver the project, including in-kind access to equipment where appropriate. • Itemise any leverage associated with the research. This can include use of existing facilities, in-kind support from other areas/projects, use of NNUF or other national infrastructure. • Demonstrate that any proposed active work has been discussed in advance with the relevant facility owners/operators and is feasible within the bounds of the proposal.  | **(0) No Evidence or very poor** • The response provides no detail on how the research project is to be managed. • No justification of project finances. **(1) Poor** • Limited justification of project finances is provided with no or insufficient cost/hours breakdown. • Milestones/deliverables/project phases are not defined. • Risk analysis/mitigation is insufficient/not defined. **(2) Acceptable** • Major costs/facility hours are itemised and justified. • Key project milestones/deliverables/phases are identified and logical. • Some risks are identified although mitigation may be lacking. • The application may recognise that NDA group or its supply chain organisations input would be required to undertake the research but lack understanding or detail. **(3) Good** • A clear and appropriate cost/facility breakdown is given • Project milestones/deliverables/phases are identified and logical and supported with a Gantt chart (or similar). • Key risks are identified, and credible mitigation is given. • Any input required from the NDA group is considered and a reasonable estimation made as to the extent of this input. **(4) Excellent** • A thorough and appropriate cost/facility breakdown is included with supporting confirmation for any existing secured funding. • Key risks are identified, and credible mitigation is given. These risks will be linked to the relevant project milestones/deliverables/phases. • Opportunities are highlighted and linked to specific milestones in the project plan/ Gantt chart. • Any input required from the NDA group or other external bodies such as a supply chain organisation is recognised and defined, and evidence provided that the applicant has had up-front discussion with the appropriate people to allow for this input. • Active work is appropriately scheduled and associated risks to the project schedule recognised and mitigated.  |

**Table 1 – Funding requirements for active research projects**

**Proposal Submission - Academic User Access 2022 Call CONTD.**

The applicant should complete this form, disclosing any existing funding already held by their research group (or please make clear why your existing funding cannot be used to cover facility access charges for your proposed experiment).

Please make clear exactly what has already been funded, versus the funding you are applying for under this call.

(Once the applicant has submitted the application form to NNL, the NNL technical team should advise on manday requirements so costings can be applied post-submission to enable the Assessment Panel to understand financial requirements of the proposal).

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|  | NDA funded researcher (e.g. PhD or PDRA on NDA bursary scheme) | Non-NDA funded researcher (e.g. independent PhD student) |
| Security clearance\* | NDA (unless applicant holds existing funding)) | Does the applicant already have existing funding from an alternative provider; e.g. University, existing grant funding, NNUF, HRI or NNL? Or is funding for this portion of the work being requested as part of this application? |
| Drugs and alcohol testing\* |
| Training courses\* |
| NNL support in the translation of the experimental requirements to enable production and approval of the written schemes of work to permission the successful experimental proposals |
| Support completing the required access forms\* |
| Transportation of samples to the NNL facility |
| Facility time | NDA (unless applicant holds existing funding) |
| NNL operator to perform the experiment | Does the applicant already have existing funding from an alternative provider; e.g. University, existing grant funding, NNUF, HRI or NNL? Or is funding for this portion of the work being requested as part of this application? |
| NNL Project Management |
| Travel expenses for attendance at the NNL facility |
| Accommodation during attendance at the NNL facility |
| Any form of salary or payment for the work performed by the academic team | Funding not included in this Call |
| Clear-up and disposal of any waste arisings | NDA (unless applicant holds existing funding) | Does the applicant already have existing funding from an alternative provider; e.g. University, existing grant funding, NNUF, HRI or NNL? Or is funding for this portion of the work being requested as part of this application? |
| NNL supervision\* |
| Support from NNL scientists on the publication of co-authored posters and production of experimental reports | NNL (if it were beyond what the researcher already receives from their nominated NNL Industrial supervisor) |

\*arranged by NNL for projects that include attendance at NNL

1. <https://www.gov.uk/government/publications/nuclear-decommissioning-authority-strategy-effective-from-march-2021> [↑](#endnote-ref-1)
2. <https://www.gov.uk/government/publications/nda-5-year-research-and-development-plan-2019-to-2024> [↑](#endnote-ref-2)
3. <https://www.gov.uk/government/publications/nuclear-decommissioning-authority-mission-progress-report-2021> [↑](#endnote-ref-3)
4. <https://www.nirab.org.uk/cdn/uploads/attachments/UK_Fission_RD_NIRO_CATALOGUE_ONLINE.pdf> [↑](#endnote-ref-4)
5. <https://www.nnuf.ac.uk/national-nuclear-laboratory> [↑](#endnote-ref-5)
6. <https://www.royce.ac.uk/partners/national-nuclear-laboratory/> [↑](#endnote-ref-6)