Notes on Completion: Please refer to the appropriate NIA Governance Document to assist in the completion of this form. The full completed submission should not exceed 6 pages in total.

NIA Project Registration and PEA Document

Date of Submission

Jan 2016

Project Reference Number

NIA_NGET0175

Project Registration

Project Title

Improving cyber security culture within operational areas

Project Reference Number

NIA_NGET0175

Project Licensee(s)

National Energy System Operator

Project Start

January 2016

Project Duration

4 years and 1 month

Nominated Project Contact(s)

Samir Odedra

Project Budget

£179,000.00

Summary

Define a risk mitigation strategy to protect National Grid from cyber risk at an operational level, by reviewing the existing National Grid security culture and proposing key areas of concern and mitigation solutions. The proposed strategy to improve to security culture which has a measurable impact on cyber security risk reduction, will be tested through a pilot project in a specific operational area of National Grid. The strategy will be reviewed and amended, based on the outcome of the pilot project.

Third Party Collaborators

Engineering and Physical Sciences Research Council

Nominated Contact Email Address(es)

box.so.innovation@nationalgrid.com

Problem Being Solved

The prevailing security culture within an organization may be strongly influenced by unjustified beliefs about what are the objectives of the organizations security policy and about what measures are effective in delivering those objectives. In order to adjust the culture of the organization so that such beliefs can be changed and so provide an environment better suited to delivering the desired security levels of security, the prevailing information security culture in the organization must be analyzed and understood

Method(s)

EPRSC co-funded project.

Research:

- Review the problem space with key stakeholders in National Grid.
- Literature review.
- Review past National Grid security culture change programs.
- Review how other industry peers manage this problem.
- Identify what will be needed to develop the strategy and risk metrics.

Development:

- Develop strategy including areas of concern and proposed solutions and review with stakeholders.
- Identify relevant operational area which can be tested with a pilot project
- Identify the tests needed to assess the framework to determine its effectiveness at reducing risk.

Demonstrate:

- Trial the strategy, analyse and evaluate the reduction in risk.

Scope

Define a risk mitigation strategy to protect National Grid from cyber risk at an operational level, by reviewing the existing National Grid security culture and proposing key areas of concern and mitigation solutions. The proposed strategy to improve to security culture which has a measurable impact on cyber security risk reduction, will be tested through a pilot project in a specific operational area of National Grid. The strategy will be reviewed and amended, based on the outcome of the pilot project.

Objective(s)

This project seeks to demonstrate cyber risks within the operational area can be reduced embedded by changing the cyber security culture within this area.

Consumer Vulnerability Impact Assessment (RIIO-2 Projects Only)

n/a

Success Criteria

Develop a strategy to improve cyber security culture that will measurably reduce cyber risks in the operational area of National Grid. The strategy will contain key areas of concern along with proposed solutions.
Test the strategy by performing a pilot project on a selected area operational area of National Grid, and then review and amend original proposal if necessary.

Project Partners and External Funding

External Funding: EPSRC £69,000

Potential for New Learning

Development and demonstration of a culture change strategy that can be used to reduce the cyber risks of inherent within the key operational areas within the energy industry.

Scale of Project

The project is of the minimum scale possible (one 4 year industrial CASE PhD student).

Technology Readiness at Start

TRL2 Invention and Research

Technology Readiness at End

TRL4 Bench Scale Research

Geographical Area

National Grid offices and partner university premises.

Revenue Allowed for the RIIO Settlement

None

Indicative Total NIA Project Expenditure

£110,000.

Project Eligibility Assessment Part 1

There are slightly differing requirements for RIIO-1 and RIIO-2 NIA projects. This is noted in each case, with the requirement numbers listed for both where they differ (shown as RIIO-2 / RIIO-1).

Requirement 1

Facilitate the energy system transition and/or benefit consumers in vulnerable situations (Please complete sections 3.1.1 and 3.1.2 for RIIO-2 projects only)

Please answer **at least one** of the following:

How the Project has the potential to facilitate the energy system transition:

n/a

How the Project has potential to benefit consumer in vulnerable situations:

n/a

Requirement 2 / 2b

Has the potential to deliver net benefits to consumers

Project must have the potential to deliver a Solution that delivers a net benefit to consumers of the Gas Transporter and/or Electricity Transmission or Electricity Distribution licensee, as the context requires. This could include delivering a Solution at a lower cost than the most efficient Method currently in use on the GB Gas Transportation System, the Gas Transporter's and/or Electricity Transmission or Electricity Distribution licensee's network, or wider benefits, such as social or environmental.

Please provide an estimate of the saving if the Problem is solved (RIIO-1 projects only)

Any malicious attack perpetrated within key operational areas has a high potential to black out the UK. The estimated savings of preventing this type of catastrophic event along with the cost of is incalculable.

Please provide a calculation of the expected benefits the Solution

Not required for research projects.

Please provide an estimate of how replicable the Method is across GB

It is expected that knowledge gained will be applicable to all relevant sites and operations across the GB networks.

Please provide an outline of the costs of rolling out the Method across GB.

Not known at this stage.

Requirement 3 / 1

Involve Research, Development or Demonstration

A RIIO-1 NIA Project must have the potential to have a Direct Impact on a Network Licensee's network or the operations of the System Operator and involve the Research, Development, or Demonstration of at least one of the following (please tick which applies):

☐ A specific piece of new (i.e. unproven in GB, or where a method has been trialled outside GB the Network Licensee must justify repeating it as part of a project) equipment (including control and communications system software).

☑ A specific novel arrangement or application of existing licensee equipment (including control and/or communications systems and/or software)

☑ A specific novel operational practice directly related to the operation of the Network Licensees system

☐ A specific novel commercial arrangement

RIIO-2 Projects

☐ A specific piece of new equipment (including monitoring, control and communications systems and software)

☐ A specific piece of new technology (including analysis and modelling systems or software), in relation to which the Method is unproven

☐ A new methodology (including the identification of specific new procedures or techniques used to identify, select, process, and analyse information)

☐ A specific novel arrangement or application of existing gas transportation, electricity transmission or electricity distribution equipment, technology or methodology

☐ A specific novel operational practice directly related to the operation of the GB Gas Transportation System, electricity transmission or electricity distribution

☐ A specific novel commercial arrangement

Specific Requirements 4 / 2a

Please explain how the learning that will be generated could be used by the relevant Network Licensees

The identified cyber risks associated with poor cyber security culture within the operational area are common across all TSO and DNOs. This research will help to increase cyber security and protect the energy infrastructure across the whole of the UK.

Or, please describe what specific challenge identified in the Network Licensee's innovation strategy that is being addressed by the project (RIIO-1 only)

n/a

☑ Has the Potential to Develop Learning That Can be Applied by all Relevant Network Licensees

Is the default IPR position being applied?

☑ Yes

Project Eligibility Assessment Part 2

Not lead to unnecessary duplication

A Project must not lead to unnecessary duplication of any other Project, including but not limited to IFI, LCNF, NIA, NIC or SIF projects already registered, being carried out or completed.

Please demonstrate below that no unnecessary duplication will occur as a result of the Project.

Not an aspect presently studied elsewhere in the UK or Europe.

If applicable, justify why you are undertaking a Project similar to those being carried out by any other Network Licensees.

n/a

Additional Governance And Document Upload

Please identify why the project is innovative and has not been tried before

n/a

Relevant Foreground IPR

n/a

Data Access Details

n/a

Please identify why the Network Licensees will not fund the project as apart of it's business and usual activities

n/a

Please identify why the project can only be undertaken with the support of the NIA, including reference to

the specific risks(e.g. commercial, technical, operational or regulatory) associated with the project

n/a

This project has been approved by a senior member of staff

☑ Yes