| Cockenzie building improvement works - OFGEM Justification Paper | |
|---|---|
| **Name of Scheme/Programme** | Cockenzie building improvement works |
| **Primary Investment Driver** | Civil works driven by condition of civil items |
| **Scheme reference/ mechanism or category** | SPNLT20103 |
| **Output references/type** | NLRT2SP20103 |
| **Cost** | £6.3m – Spend of £2.8m in RIIO T1 and £3.5m in RIIO T2 |
| **Delivery Year** | 2019-2022 |
| **Reporting Table** | Tables C0.7 and C2.2a AP and C2.2a CI |
| **Outputs included in RIIO T1 Business Plan** | Yes |

| Issue Date | Issue No | Amendment Details |
|---|---|---|
| July 2019 | Issue 1 | First issue of document |
| December 2019 | Issue 2 | Amendments to costs. |

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## 1 Introduction

Civil assets used to support the main electrical equipment are essential to the safe operation of the transmission system. The condition of these assets can have a bearing on the strategy for the management of the electrical assets and long term stewardship of civil assets is a key priority.

At Cockenzie 275kV substation the life of the main plant has been extended through evolution in technologies, mid-life interventions and improved maintenance regimes, however the substation building which houses the main plant requires to be upgraded. This scheme was commenced in RIIO T1 and due to system access requirements and the nature of the works, is proposed to be completed in RIIO T2.

This paper supports a proposal to continue and complete a scheme to refurbish the existing building at Cockenzie 275kV substation within RIIO T2.

## 2 Background Information

Civil assets are classed as non-lead assets and are not within the scope of the NARM mechanism. However, SPT have an asset management system in place to ensure that these assets are inspected, recorded and managed from a risk perspective.

A comprehensive programme of civil inspections have been undertaken across the network and it was identified through these inspections that Cockenzie substation building is in a poor condition and without further intervention will degrade to a point where it cannot be repaired.

## 3 Optioneering

The following is a summary of the options considered for this programme. The respective associated drawings for each of these options are available for review.

| | **Option** | **Status** | **Reason for rejection** |
|---|---|---|---|
| 1 | **Do Nothing** | Rejected | Through our detailed inspection process it has been determined that no intervention will lead to failure of the asset. |
| 2 | **Replace** | Rejected | Replacement of building outside the normal cycle of switchgear replacement is impractical and uneconomic. Therefore this option was rejected. |
| 3 | **Refurbishment** | **Proposed** | - |

# 4 Detailed analysis

## 4.1 Selected Option

SPT has a strategy with civil assets to visually inspect annually and intervene when asset condition requires. This has been a historical approach and interventions have been reactive maintenance and defect repairs. As the life of the main plant has been extended through evolution in technologies, mid-life interventions and improved maintenance regimes, the required life of the associated buildings also requires to be examined.

## 4.2 Condition Assessment

### 4.2.1 Methodology Approach

A comprehensive programme of civil inspections has been undertaken across the network and it has been identified through these inspections that the building at Cockenzie 275kV substation is in poor condition.

### 4.2.2 Outputs from Assessment

During the inspection programme each civil asset has been assigned a Health Index consistent with the standard SPT range of 1 to 5. Health Index 1 is considered to be new or as new and Health Index 5 is end of life.

Cockenzie substation building was identified as being Health Index 5. This means that the assets are either at or approaching End of Life and in need of refurbishment.

It was identified that to improve the integrity of the building at Cockenzie, such that it can provide a suitable environment to house the electrical assets, the following works were required:

- Removal of the existing cladding around the building, including extensive sections of glazed cladding containing asbestos;
- Installation of a new insulated cladding solution around the building;
- Installation of internal lighting to provide a safe working environment for operatives;
- Repairs and waterproofing to the building roofs to ensure they remain fit for purpose and provide a suitable environment for the electrical infrastructure to operate.

## 4.3 Sustainability

The SPT sustainability approach is to prioritise reuse, then refurbish and finally replace if there is no other option. The refurbishment of the existing building is a sustainable strategy and in the long term will lead to a significant reduction in the volumes of raw materials associated with new concrete and steelwork. It will also eliminate the need to dispose of the concrete and steelwork associated with the existing building.

## 4.4 Innovation

Innovation is a key component to deliver developments in all aspects of work. While the technology used in the project will be standard with a proven track record and the application adopted in line with industry standards, SPT will look to use innovate ways of project delivery and installation to deliver this programme of works.

## 5 Conclusion

The historical approach to civil structures as assets which are maintenance free and replaced with the associated plant at end of life is no longer a valid investment strategy. This is due to the development of mid-life refurbishments and improved maintenance of the main plant equipment. Refurbishment of the Cockenzie substation building is required to ensure life extension that aligns with the electrical plant it is housing.

- Predicted costs: £6.3m
- Spend of £2.8m in RIIO T1 and £3.5m in RIIO T2
- Timing of investment: 2019-2022
- Declared outputs: N/A

## 6 Future Pathways – Net Zero

We have reviewed this project against the criteria set out within the business plan guidance and have assessed that it does not prevent achievement of our Net Zero plans or lead to stranded assets

## 7 Outputs included in RIIO T1 Plans

Within the RIIO-T1 allowance a 'Substation Civil Refurbishment' programme was agreed. During RIIO T1 it was identified that the substation building at Cockenzie was in need of major refurbishment and £2.8M of the 'Substation Civil Refurbishment' allowance has been used to fund the programme of works at Cockenzie during RIIO T1. Due to system access restrictions and the complexity of the work associated with the scheme the overall project will not be completed until 2022. The project costs being incurred in RIIO-T2 are the subject of this justification paper.