Business Case – Capital Expenditure

Vent and Flare Stack

Business Case Number 240

1 Project Approvals

TABLE 1: BUSINESS CASE – PROJECT APPROVALS

Prepared By	Anthony Jones, *Pipeline and Asset Management Engineer, APA Group*
Reviewed By	*Benjamin Foo, Pipeline Services Engineer, APA Group*
Approved By	Craig Bonar, *Manager East Coast Grid Engineering, APA Group*

2 Project Overview

TABLE 2: BUSINESS CASE – PROJECT OVERVIEW

Description of Issue/Project	APA owns a portable flare and vent to control the depressurization of pipelines for various reasons. The new CL900 pipeline requires a new portable vent and portable flare for such operations in the future.
Options Considered	The following options have been considered: 1. Option 1: Do Nothing Option 2. Option 2: Acquisition of vent and flare stacks for CL900 pressure
Estimated Cost	$210,340
Consistency with the National Gas Rules (NGR)	The replacement of these assets complies with the new capital expenditure criteria in Rule 79 of the NGR because: • it is necessary to maintain and improve the safety of services and maintain the integrity of services (Rules 79(2)(c)(i) and (ii)); and • it is such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services (Rule 79(1)(a)).
Stakeholder Engagement	No stakeholders have been identified for this project

3 Background

In order to remove hydrocarbons from a pressurized pipeline, the pressure must be reduced, then pushed out with some other gas medium. The gas must either be consumed by downstream consumers or released to the environment. When released into the environment the gas can either be burnt (flare) or directly released (vent). Each method requires different tools to enable this process to be conducted safely.

The current situation in Victoria is the existing tooling has limited capacity and the pressure rating is lower than the maximum allowable operating pressure of some pipelines. This creates a situation where pipeline pressure must be reduced prior to venting or flaring by the Australian Energy Market Operator.

4 Risk Assessment

TABLE 3: RISK RATING

Risk Area	Risk Level
Health and Safety	**Medium**
Environment	**Medium**
Operational	**Medium**
Customers	**Low**
Reputation	**Medium**
Compliance	**Low**
Financial	**Low**
Final Untreated Risk Rating	**Medium**

The vent and flare stack designs need to meet the following requirements:

- Enable the technician to operate the vent or flare without being in a danger zone
- Enable the stack to withstand the applied loads present during discharge reaction forces
- Ensure the highest possible stack to reduce the likelihood of vented gas contacting ignition sources and for flares to increase the rate of burning and thus reducing depressurisation time.

5 Options Considered

5.1 Option 1 – Do Nothing

- The Do Nothing option is to rely on the existing tooling that is not designed for the required rated capacity. This means APA are limited to inferior performance of basic equipment.
- The new DN400 pipeline from Wollert to Wodonga is capable of operating at pressures that no other Victorian pipeline operates at. Thus the need for an appropriately rated vent and flare is required.
- In addition to the new DN400 Class 900 pipeline, there is approximately 389 km of pipeline within the VTS that operates at a pressure above the maximum allowable of the existing vent and flare system. Whilst these pipelines do not always operate at maximum pressure, the ability to use emergency equipment should not be limited by chance.

5.1.1 Cost/Benefit Analysis

The cost of the preferred option is low, thus any benefits of the Do Nothing option are quickly eclipsed by the gains made.

5.2 Summary of Cost/Benefit Analysis

TABLE 4: SUMMARY OF COST/BENEFIT ANALYSIS

Option	Benefits (Risk Reduction)	Costs
Option 1	Do Nothing	Indeterminate
Option 2	Purchase new Vent and Flare	$210,340

5.3 Proposed Solution- Option 2

5.3.1 Purchase a new Vent and Flare

The selected option is to procure a new vent and flare stack capable of withstanding the pressures and temperatures expected from a class 600 pipeline operating at maximum pressure. There are approximately 389 km of pipeline in the VTS that is capable of operating above the current capability of VTS vents and flares. The current alternative is to lower the pressure of these pipelines by other means before a vent or flare can be installed. This reduces the capability of APA to respond to emergencies and increases the response time.

5.3.2 Why are we proposing this solution?

The Pipeline License (PL) requires APA to operate the VTS in accordance with AS2885.3. There is a section (11) in AS2885.3 Emergency Response; "…shall include…having adequate emergency equipment, pipe and fittings fit for the intended purpose readily available at all times, complete with traceable material test certificates." In order for APA to achieve compliance with PL requirements, the VTS needs to be equipped with appropriate portable venting and flaring systems for 10,200 kPa pipelines.

5.3.3 Consistency with the National Gas Rules

Consistent with the requirements of Rule 79 of the National Gas Rules, APA considers that the capital expenditure is:

- Prudent – The expenditure is necessary in order to maintain and improve the safety of services the public and personnel and is of a nature that a prudent service provider would incur.
- Efficient – The design and construction work will be carried out by the external contractor that has been used to date, who has demonstrated specific expertise in venting and flaring systems. The expenditure can therefore be considered consistent with the expenditure that a prudent service provider acting efficiently would incur
- Consistent with accepted and good industry practice – Addressing the risks associated venting and flaring operations and replacing assets that have reached the end of their useful life is accepted as good industry practice. In addition, the reduction of risk to as low as reasonably practicable in a manner that balances cost and risk is consistent with Australian Standard AS2885.
- To achieve the lowest sustainable cost of delivering pipeline services – The sustainable delivery of services includes reducing risks to as low as reasonably practicable and maintaining reliability of supply.

5.3.4 Forecast Cost Breakdown

The cost of fabrication and design will dominate the cost of this solution. A majority of the costs will be from external contractors.

TABLE 5: PROJECT COST ESTIMATE,

	Total
Internal Labour	$46,012
Materials	$164,328
Contracted Labour	$0
Other Costs	$0
Total	**$210,340**