



# Case Study

## North Sea Asset

### PSV Methodology

### Application

### Document



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## **1 Introduction**

The following case study is based on a real life North Sea Asset; for commercial reasons, this asset is simply named Alpha. In this particular instance, we provided re-certification cost savings of 31%; however other instances have led to reductions of up to 50%.

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## **2 Job Scope**

Using **iicorr**'s time-served Questar®-PSV methodology (which incorporates latest industry best practices), **iicorr** were called upon to optimise the re-certification frequencies of 370 PSVs located within the platform's production facilities.



**3 Re-certification costs before application of Questar®-PSV**

Based on an existing standard cost of £300.00 per PSV re-certification, and by applying the re-certification intervals that currently exist on the asset, the re-certification costs being incurred by the operator, prior to application of Questar®-PSV, were identified as being £115,080.00 over 36 months.

This cost was based on the following PSV re-certification intervals:

12 months	3.2%	(12 valves)
24 months	8.1%	(30 valves)
36 months	61.4%	(227 valves)
48 months	27.0%	(100 valves)
60 months	0.3%	(1 valve)



**4 The Questar®-PSV Methodology**

Our own proven Failure Risk Assessment (FRA) was performed, in order to predict the probabilities and consequences of failure, associated with each of the 370 PSVs. In doing so, a risk value could be attached to each PSV and various levels of failure criticality could be identified and categorised.

Throughout the assessment process, members of **icorr**'s highly experienced engineering staff performed validity checks and provided engineering judgement, in order to assure high levels of service quality.

In addition to analysing the facility layout and its process characteristics, valve data, historic intervention reports and records were analysed, in order to ensure that full cognisance was given to actual service conditions and equipment performance.

Once a specific value of risk for each of the 370 PSVs was obtained, the risk matrix below was used to determine re-certification intervals.

**Table 1 Risk Matrix (figures given in months)**

		CONSEQUENCE		
PROBABILITY		HIGH	MEDIUM	LOW
	HIGH	24	36	60
	MEDIUM	36	48	72
	LOW	48	60	84

**Re-certification following our application of Questar®-PSV:**

Following application of the Questar®-PSV methodology, the cost of re-certification was calculated as being £79,168 over the same 36 month period.

The re-certification intervals recommended by **icorr** were as follows, (it should be noted that **icorr** set a minimum and maximum inspection interval of 24 and 84 months respectively):

24 months	4.9%	(18 valves)
36 months	11.9%	(44 valves)
48 months	29.4%	(109 valves)
60 months	39.2%	(145 valves)
72 months	3.8 %	(14 valves)
84 months	10.8%	(40 valves)

76% (287) of valves were recommended for increased re-certification intervals of which the majority had a re-certification period of 48 months or greater.

This particular application of Questar®-PSV provided re-certification cost reductions of £35,912 (31% cost saving); however other instances of its application have led to reductions of up to 50%.



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## **5 Overall**

The application of **icorr's** Questar® methodologies, not only provide our customers with tangible cost savings (as demonstrated in the example above); they also enhance the critical intangible value associated with the assurance of facility integrity, minimal production loss, personnel safety and environmental preservation.

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