

Short impact assessment template

Description of the intervention:

To replace a terminal guidance note with an easy to understand guide to safe operation and management of steam boilers. This option reinforces duties under previous legislation.

Objectives:

To increase compliance to the factories act, preventing explosions of all pressure equipment especially steam boilers.

Calculation of costs:**Assumptions:**

1. Guidelines affect approximately
 - 5 million employees
 - 110,000 work places
 - 110,000 managers
 - 220,000 boilers (based on an average of two boilers per work place)
2. cost per hour of managers time is £21.20¹
3. cost per hour of boiler operators is £9.93²
4. Costs are discounted over a ten year period and presented in present values. Discount rate of 3.5% is used in line with Treasury guidance.

Costs to HSE

Costs to HSE include drafting and issuing the revised guidance, this is a one off cost in the first year. Drafting the document will take approximately 40 working days of a grade 3 time which is costed at £365³ per day. This costs a total of £14,600

The publication will be in an online format where managers are able to print the document if required. There is a negligible cost to HSE associated with this part of the publication process.

Approximately 10,000 copies will be printed at a cost of £3,000.⁴

Inspection and enforcement costs are assumed to say the same.

¹ Annual survey of Hours and Earnings, Office of National Statistics. This cost is multiplied through by 1.3 to represent a full economic cost for analysis. The total hourly cost therefore being £27.56

² Annual survey of Hours and Earnings, Office of National Statistics. This cost is multiplied through by 1.3 to represent a full economic cost for analysis. The total hourly cost therefore being £12.90

³ Cost taken from HSE Ready Reckoner for band 3 administrator not based in London. The costs include average salary plus overheads which include for the most part accommodation costs (rent, rates utils etc), central services

⁴ Information from CDS

Costs to business

1. Risk assessment costs

Managers at approximately 110,000 work places will need to download and familiarise themselves with the document. Assuming each manager spends half an hour reading through the new document when it is first issued, this will result in a one off cost of approximately £1.5m⁵ in the first year.

Legislation already requires managers to carry out a risk assessment on boilers. These should be reviewed at regular periods (for simplicity it is assumed that the review period is one year) and when a change to the operation or surroundings have occurred. The risk assessment should take on approximately an hour per boiler. If there are no existing risk assessments in place, based on 220,000 boilers this equates to 220,000 hours of managers time per year. If risk assessments were carried out on all boilers, this would cost approximately £4.7⁶m per year.

Assuming that some managers have already carry out the risk assessment, the impact of the new guidance will be to increase the total number doing so. The table below shows a sensitivity analysis for a 5%, 10% and 20% (of total) increase in the number of managers doing risk assessments (5%, 10% and 20% of the £2m total):

| 5% increase | 10% increase | 20% increase |
|-------------|--------------|--------------|
| £233,200 | £466,400 | £932,800 |
| £230,000 | £470,000 | £930,000 |

The second row presents rounded numbers for simplicity.

If the percentage increase is maintained over the discount period, the present value for the increased compliance is between £230,000 and £930,000 per year (depending on compliance level).

Furthermore, some managers that are already doing risk assessments may improve the quality of the assessments they carry out. It is not possible to put a cost against this at this stage.

Managers need to keep a record of the assessments they carry out, including what they did, what they found and contact with manufacturers / specialists for advice. PWC estimated the overhead costs for land lords keeping records of an annual gas safety check at £9.95 – using this as a proxy, we assume that record maintenance costs each manager is on average (some managers may have fewer or greater boilers in their care) £10 per year. For all managers this is a yearly burden of £1,100,000. As before, the guidance will increase the proportion of managers doing risk assessments and improve the quality of those already being taken (costing for the latter is not presented here). Using the same proportions to measure the burden from an increase in compliance by 5%, 10% and 20%:

⁵ (£13.78 x 110000 = 1,515,800)

⁶ £4,664,000

| 5% increase | 10% increase | 20% increase |
|-------------|--------------|--------------|
| £55,000 | £110,000 | £220,000 |
| £50,000 | £100,000 | £200,000 |

If the percentage increase is maintained over the discount period, the present value for keeping records is between £50,000 and £200,000 per year (depending on compliance level).

2. Boiler house safety costs

The guidance encourages maintenance to be carried out by a suitably qualified person and for manager to take responsibility for the effective communication between personnel involved in installation and maintenance.

This is likely to be a negligible increase cost.

3. Training

There is an emphasis on training in the revised guidance; as a result there could be an increase in the take up of training schemes. Currently there are approximately 200 attendees on training courses per year. If a course lasts three days and costs approximately £2000 per person (including VAT, accommodation and subsistence) the total cost of training is £520,000 per year. Using the 5%, 10% and 20% increase in compliance costs in PV terms is:

| 5% increase | 10% increase | 20% increase |
|-------------|--------------|--------------|
| £16,528 | £33,057 | £66,114 |
| £17,000 | £33,000 | £66,000 |

If the percentage increase in training is maintained over the discount period, the present value cost for this between £17,000 and £66,000 per year.

4. Maintaining a Written Scheme of Examination (WSE)

A WSE is already required by PSSR Regulation 8; however there is a potential increase in compliance due to new guidance. This will result in the duty holder utilising the services of a Competent person (this could be in-house) to agree the WSE. The cost of this will depend on the complexity of the systems and will need to be reviewed periodically. Most inspection companies will either include the cost of the WSE in the first examination costs or provide it free if the boiler owner signs up to their services for inspection/examination. The average cost of the examination and WSE would be between £100 to £150 per year. Examination in accordance with the scheme will need to take place at least every 5 years and will result in the Boiler been out of operation once every 10 years.

Present value costs for all boilers to maintain a WSE are £4m - £6m. Using the 5%, 10% and 20% increase in compliance costs in PV terms is:

| 5% increase | 10% increase | 20% increase |
|---------------------|---------------------|------------------|
| £200,000 - £300,000 | £400,000 - £600,000 | £800,000 - £1.2m |

If the percentage increase in compliance is maintained over the discount period, the increase cost is between £200,000 and £1.2million per annum.

5. Water treatment

The guidance could result in better attention being taken to the water treatment procedures and therefore an increased cost in some cases. This will purely depend on the level of awareness at present and the quality of the treatment that is currently being undertaken. It could also result in savings where the current procedure is reviewed and found to be over specified.

Total costs

Total costs to industry are between **£2m** (5% increase in compliance) and **£3.9** (20% increase in compliance)

Total costs to HSE are **£17,600**.

| Cost to HSE | 5% increase | 20% increase |
|------------------|-------------|--------------|
| Drafting | £14,600 | £14,600 |
| Publication | £3,000 | £3,000 |
| TOTAL | £17,600 | £17,600 |
| | | |
| Cost to Business | 5% increase | 20% increase |
| Familiarisation | £1.5m | £1.5m |
| Risk Assessment | £230,000 | £930,000 |
| Records | £50,000 | £190,000 |
| Training | £17,000 | £66,000 |
| WSE | £2000,000 | £1.2m |
| TOTAL | £1,997,000 | £3,886,000 |

Impact on industry (including any effect on the Admin Burdens Baseline):

Total costs to industry are between **£2m** (5% increase in compliance) and **£3.9** (20% increase in compliance)

Benefits (quantified where possible):

There are currently no reported incidents of boilers exploding in the UK, but there have been some failures in the USA and worldwide. There are a number of other factors that need to be considered when exploring the reason for this guidance.

- The changes in the use of land around (more housing on brown filed sites) the boiler installation have increased the possible number of injuries and fatalities as more people are brought into the blast zone.
- The changes in the supervision and control of boilers has lead to an increase in inexperienced staff being put in charge of the boiler plant with not previous experience. This is confirmed by the number of companies sending operators in the Training schemes (see above).
- This lack of awareness of the requirements of the legislation means that less boilers are being inspected which was the original control

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| <p>measure brought in top prevent boiler explosions.</p> <ul style="list-style-type: none">• Correct boiler operation will lead to better efficiency and hence savings in running costs as well as improved safety. |
| Consultation: |
| Chief Economist's comments: |
| Recommendation: |

Signed:.....
HSE's Chief Economist

Date: