

**COAL AUTHORITY**  
**SUBSIDENCE SECURITY GUIDANCE NOTE**

*Operators' estimates of cost of present and future claims in relation to  
Subsidence Damage arising from past and proposed Coal-Mining Operations*

**1. Introduction**

- 1.1 The purpose of this Guidance Note is to give advice to licensees in relation to the practice which the Coal Authority ("the Authority") will normally adopt in connection with the determination of the amount or value of the security that licensees may be required to provide in accordance with the terms of their operating licences in respect of their present and future liabilities in relation to subsidence damage.
- 1.2 This Note and its Annexes give guidance to licensees as to the preparation of operators' periodic estimates in respect of the anticipated cost of undischarged and projected claims in relation to subsidence, required to be submitted to the Authority.
- 1.3 Subject to Section 6 of this Note below, estimates prepared in accordance with Section 4 will normally be adopted by the Authority as the basis for determination of the amount or value of security to be provided by licensees.
- 1.4 Section 5 of this Note outlines the procedure that will normally be adopted by the Authority, in the absence of any formal dispute resolution procedure, in the event that the Authority disagrees with any element of an operator's estimate.

**2. The requirement for security**

- 2.1 The Authority has duties under the Coal Industry Act 1994 ("CIA") in carrying out its licensing functions, *inter alia*, to secure, so far as practicable, that operators are able to finance the discharge of their liabilities arising from the carrying on of coal-mining operations and that operators make such financial provision as may reasonably be required of them in order to secure that they will be able to meet their present and future liabilities in relation to subsidence damage.
- 2.2 In pursuance of those duties, the Authority, before or at any time after the grant of an operating licence pursuant to Part II of the CIA, may require the holder of that licence ("Licensee") to provide security in respect of his existing and projected subsidence liabilities.
- 2.3 The Licensee is responsible for satisfying all claims made under the Coal Mining Subsidence Act 1991 ("the 1991 Act") in relation to subsidence damage which affects land within the area of responsibility ("AoR") for the time being designated under his operating licence. This is the case regardless of when, and by whom, the coal-mining operations giving rise to a claim were carried out.
- 2.4 A Licensee's responsibility for claims arising under the 1991 Act within his AoR continues until his AoR has been extinguished by the Authority (or modified by agreement) in accordance with the terms of his operating licence.
- 2.5 The Interaction Agreement, entered into by the Authority and all licensed operators (and their transferees) provides, *inter alia*, for a regime for the protection of the interests of operators whose areas of responsibility might be affected by subsidence damage caused by operations proposed to be carried out by another licensee.

### **3. The review of the provision of security under operating licences**

- 3.1 The Authority's operating licence contains the necessary mechanisms :-
- 3.1.1 to enable the Authority (where appropriate) to require the Licensee to provide security, in a form and substance approved by the Authority, in relation to his subsidence liabilities; and
  - 3.1.2 for reviewing the need for, and the adequacy of, such security from time to time.
- 3.2 Where required, security will normally be of an amount or value sufficient to meet the cost of all undischarged and projected claims in relation to subsidence damage within the Licensee's AoR, which :-
- 3.2.1 has occurred or is likely to occur as a result of coal-mining operations which have already been carried out; and
  - 3.2.2 which are intended to be carried out by the Licensee during the following twelve months.
- 3.3 It will be open to the Authority and the Licensee to agree the detailed arrangements whereby any security required to be provided in relation to proposed coal-mining operations is in place prior to the commencement of those operations.
- 3.4 The amount or value of the security provided by the Licensee will normally be reviewed by the Authority every twelve months.
- 3.5 The Interaction Agreement (referred to in paragraph 2.5 above) enables a licensee who is required to provide security in respect of another licensee's coal-mining operations himself to obtain suitable counter-indemnities and appropriate security.)
- 3.6 For the purposes of assisting the Authority in determining the amount or value of the security, the Licensee is required under the terms of licence to submit :-
- (a) plans and sections showing the date of commencement, the extent, location and nature of the coal-mining operations that the Licensee intends to carry out during the following twelve months;
  - (b) the best estimate of the Licensee, prepared on a basis satisfactory to the Authority, of the anticipated cost of all undischarged and projected claims in relation to subsidence damage described in paragraph 5 above; and
  - (c) details of the security proposed by the operator to meet the requirements of the operating licence.
- 3.7 If at any time the Licensee becomes aware of any event or circumstance that might have a material affect on any previous estimate of the cost of subsidence claims, he must notify the Authority and, if appropriate, submit a revised estimate.

### **4. The preparation of estimates by operators**

- 4.1 The Authority will expect all cost estimates submitted by licensees to be prepared fairly and reasonably, in a competent and professional manner and by a suitably qualified person who has the relevant experience.
- 4.2 All estimates must be submitted with full supporting information sufficient to demonstrate the basis of calculation of each element of the estimate.
- 4.3 Following receipt of an operator's estimate and supporting information, the Authority may require clarification or further information concerning the calculation of any element of the estimate or the assumptions upon which it is based.

- 4.4. By way of example :-
- 4.4.1 Annex A describes a satisfactory basis for calculation of the estimated cost of claims in relation to underground subsidence damage.
  - 4.4.2 Annex B contains an example of a detailed estimate of the cost of claims arising from one panel of coal.
  - 4.4.3 Annex C contains an example of a detailed estimate of security for a mine at an annual review.

## **5. Where the Coal Authority disagrees with an operator's estimate**

- 5.1 If the Authority disagrees with any element of the Licensee's estimate, it will normally notify the Licensee in writing of the disputed element(s), giving reasons, within 20 working days of the receipt of the Licensee's estimate.
- 5.2 The Licensee will be invited to comment upon the disputed element(s) and the reasons given by the Authority for the disagreement.
- 5.3 If, after discussion, the Authority and the Licensee are unable to resolve the disagreement concerning the estimate, the Licensee will normally be invited, at his cost, to obtain an independent opinion upon the issue(s) in dispute from an expert acceptable to the Authority.
- 5.4 The Authority will have regard to (but will not be bound by) such expert opinion when determining the amount or value of the security that the Licensee is required to provide pursuant to his operating licence.

## **6. Determination of the amount or value of security**

- 6.1 The security that the Licensee may be required to provide pursuant to his operating licence must normally be adequate to finance the anticipated cost of all undischarged and projected claims in relation to subsidence damage as described in paragraph 3.2 above.
- 6.2 The amount or value of the security required by the Authority will not necessarily be equal to the estimated base cost of such claims. In determining the amount or value of the security, the Authority will have regard to all factors relevant to setting the security at an appropriate level so as to ensure that there will be sufficient monies available to meet the estimated cost of claims.
- 6.3 Such factors will be, principally, the form and substance of the security and any costs associated with the administration and enforcement of the particular security proposed by the Licensee. At the date of this Note this figure is 5.4% and Licensees should take account of these factors when submitting the details of the form and substance and amount or value of the proposed security for approval by the Authority pursuant to their operating licences.
- 6.4 Security is not normally required for costs attributed to preventive works as these are carried out prior to mining and not required if a mine ceases coal-mining operations and the Licensee defaults on his obligations to remedy subsidence damage.
- 6.5 The amount of the security will need to be sufficient to cover any cash outlays in respect of the discharge of subsidence claims, inclusive of any applicable value added tax ("VAT"). The VAT recovery position in respect of the cost of remedial works may depend upon the precise nature of the security arrangements, but the Authority will in any event require the security to be such that adequate funds will be available to meet subsidence claims, irrespective of the VAT recovery position.
- 6.6 The amount or value of the security, ultimately, will be for the Authority to determine, properly and fairly, in accordance with its statutory duties.

## **7. Surface Mine Security**

7.1 The principles relating to the Licensee's liability for subsidence are the same for both underground and surface mines. Therefore a surface mine Licensee is similarly required to submit to the Authority an estimate of all undischarged subsidence damage claims and all subsidence damage claims projected to occur in the proposed AoR. The Licensee will need to take account of all matters relating to ground movement including *inter alia* :-

- 7.1.1 instability of excavations affecting property within or outside the site or AoR and the need to seek revisions to the proposed Area of Responsibility;
- 7.1.2 the likelihood of subsidence damage claims occurring within the AoR arising from collapsed underlying workings whether or not due to site operations;
- 7.1.3 de-watering of old workings with regard to potential subsidence in the surrounding areas within and outside the proposed AofR.

## ASSESSMENT OF COSTS OF SUBSIDENCE DAMAGE

### 1. Introduction

- 1.1 The purpose of this Annex is to set out the principles of an acceptable method of calculation for the estimation of subsidence damage costs which assesses prediction of ground movement.

### 2. Evaluation of Subsidence Damage Costs

- 2.1 The provision of financial security will normally be based upon an up to date surface plan and detailed mine layouts for workings proposed during the next 12 months, together with estimated costs of outstanding liabilities from previous mining.
- 2.2 Security is not taken for the costs incurred in carrying out preventative works.
- 2.3 An administrative charge of, normally, 5.4% is added to cater for the Authority's costs associated with any administration and enforcement of the particular security in the event of Licensee default.

### 3. Prediction of Ground Movements

- 3.1 The bases for prediction of surface ground movements are the plans of working and proposed working and the depth and thickness of extraction. Estimates of vertical subsidence, horizontal ground strain, displacement and slope should be made by reference to the Subsidence Engineers' Handbook or a subsidence prediction model based upon local observations.

### 4. Houses

- 4.1 For estimating the cost of damage to houses, the area of surface influence from a panel of working should be considered in three zones :-
- Zone 1 embraces the area of maximum ground movement within an area of  $0.1d$  ( $d$ =depth) around the panel projected to the surface perpendicular to the seam gradient within the proposed extraction area;
- Zone 2 is the area between  $0.1d$  and  $0.5d$  outside the panel (similarly adjusted for gradient); and
- Zone 3 is the area beyond  $0.5d$  outside the panel.
- 4.2 Within Zone 1 it should be assumed initially that the number of damage claims (claim rates) would be 100% and in Zone 2, 60%. Estimates of the number of claims outside  $0.5d$  (ie. Zone 3) should be based upon local experience and costed separately.
- 4.3 In each of these zones, the initial claim rates should be adjusted to take account of the extent of past mining, geology, superficial deposits, fissures, information on previous claim rates and any other relevant factors.
- 4.4 Available data on the average costs of discharging claims in the locality, adjusted as appropriate to meet potential variations in building types and costs and known unusual geology and old workings, should be used to estimate the total annual cost of surface damage to houses. Where such data is not locally available, a more detailed assessment should be made based on the most appropriate comparable geotechnical, mining and surface conditions.

## **5. Other Properties**

- 5.1 The estimated cost of discharging claims in respect of subsidence damage to industrial, commercial, educational, religious and larger domestic premises, agricultural properties, drainage systems, watercourses, reservoirs, dams, railways and other services should be subject to individual technical assessment. Such assessments would normally include detailed consideration of :-
- 5.1.1 the subsurface ground conditions;
  - 5.1.2 the current structural condition of the property including :-
    - (a) foundations,
    - (b) form and size of buildings,
    - (c) construction materials,
    - (d) structural design, soundness and vulnerability to ground movement,;
  - 5.1.3 the extent of predicted ground movements;
  - 5.1.4 the likelihood and extent of damage to the structures;
  - 5.1.5 processes and uses;
  - 5.1.6 the practicability of undertaking preventive works.
- 5.2 In each it would be necessary to inspect the premises. In some cases it would be appropriate to have detailed technical discussions with surface property owners and technical advisers. The estimates would include costs of agreed preventive works, remedial and other measures and associated expenses.

## **6. Review of Estimate**

- 6.1 Estimated damage costs formulated as above should normally be reviewed by Licensees quarterly.
- 6.2 Estimated and actual damage costs should be aggregated annually and any payments made during the year to discharge claims should be deducted from this aggregate for the purpose of assessing the revised estimate for the succeeding year.

## **7. Illustrations**

- 7.1 An example of a detailed estimate of damage costs predicted from a panel is illustrated in Annex B.
- 7.2 An example of a detailed estimate of security for a mine at an annual review is illustrated in Annex C.

**NOTIONAL ESTIMATE OF COSTS FOR LONGWALL PANEL A****£1,000s**

1.	Domestic Properties		
	<i><b>Zone 1</b></i>	<i><b>50 houses</b></i>	
		<i>50 houses @ 100% claim rate x say £3,500</i>	<i>175</i>
		<i>10 houses severely damaged (say additional £15,000 per house)</i>	<i>150</i>
	<i><b>Zone 2</b></i>	<i><b>300 houses</b></i>	
		<i>300 houses @ 60% claim rate x say £3,500</i>	<i>630</i>
	<i><b>Zone 3</b></i>	<i><b>100 houses</b></i>	
		<i>100 houses @ 10% claim rate x say £3,500</i>	<i>35</i>
			<hr/>
	Total Estimated Cost for Domestic Properties		990
2.	Factory A	(Cost based on expert technical estimate)	100
3.	School B	(Cost based on expert technical estimate)	25
4.	Roads	(Cost based on expert technical estimate)	50
5.	Sewers	(Cost based on expert technical estimate)	85
6.	Preventive Works		250
			<hr/>
	<b>Notional Subsidence Damage Cost for Panel</b>		<b>1500</b>

*[NB: The above amounts do not include VAT.]*





EXAMPLE COLLIERY SUBSIDENCE SECURITY ASSESSMENT TO MAY 2013								
Provision at May 2011	Provision for 2011/12 mining	Claims Expenditure for 2011/12	Provision at May 2012	Provision for 2012/13 Mining	Preventive Works	Provision to May 2013	Admin @ 5.4%	TOTAL SECURITY REQUIRED
£900,000	£500,000	(£475,000)	£925,000	£1,000,000	(£250,000)	£1,675,000	£90,450	<b>£1,765,450</b>