

HSE'S CURRENT APPROACH TO LAND USE PLANNING (LUP)

POLICY & PRACTICE

1. The aim of health and safety advice relating to land use planning is to mitigate the effects of a major accident on the population in the vicinity of hazardous installations, by following a consistent and systematic approach to provide advice on applications for planning permission around such sites.

Since the early 1970s, arrangements have existed for local planning authorities (PAs) to obtain advice from HSE about risks from major hazard sites and the potential effect on populations nearby. The Advisory Committee on Major Hazards (ACMH), set up in the aftermath of the Flixborough disaster in 1974, laid down a framework of controls which included a strategy of mitigating the consequences of major accidents by controlling land use developments around major hazard installations

Historically, HSE has based its land-use planning advice on the presumption that site operators are in full compliance with the Health & Safety at Work etc. Act 1974 (HSW Act). Section 2 of the Act places a duty on an employer to ensure, so far as is reasonably practicable, the health and safety of his employees. There is a corresponding duty in section 3 to ensure, so far as is reasonably practicable, that others (which includes the public) are not exposed to risks to their health & safety. It was presumed that the safety precautions taken by the employer to comply with Section 2 (risks to his workers) would also ensure compliance with Section 3 of the HSW Act.

The main legal driver now is the EU Seveso II Directive, the principal land use planning aspects of which are given effect in the UK by the Planning (Hazardous Substances) Regulations (the PHS Regulations) and associated legislation.

HSE's ROLE

2. HSE's specific role in LUP is **twofold**:

- i. Under the PHS Regulations, the presence of hazardous chemicals above specified threshold quantities requires consent from the Hazardous Substances Authority (HSA), which is usually also the local planning authority (PA). HSE is a statutory consultee on all hazardous substances consent applications. **Its role is to consider the hazards and risks which would be presented by the hazardous substance(s) to people in the vicinity, and on the basis of this to advise the HSA whether or not consent should be granted.** In advising on consent, HSE may specify conditions that should be imposed by the HSA, over and above compliance with statutory health and safety requirements, to limit risks to the public (eg. limiting which substances can be stored on site, or requiring tanker delivery rather than on-site storage). HSAs should notify HSE of the outcome of all applications for consent and where consent has been granted should supply copies of the site plans and conditions.
- ii. HSE uses the information contained in consent applications to establish a consultation distance (CD) around the installation. This usually comprises three zones or risk contour areas – see paragraph 4. The CD is based on the maximum quantity of hazardous substance(s) that the site is entitled to have

under its consent. HSE notifies the LPAs of all CDs in their areas. The General Development Procedure Order requires the LPA to consult HSE about certain proposed developments (essentially those that would result in an increase in population) within any CD. **HSE advises the LPA on the nature and severity of the risks presented by the installation to people in the surrounding area so that those risks are given due weight by the LPA when making its decision. Taking account of the risks, HSE will advise against the proposed development or simply note that it does not advise against it.** This advice balances the ACMH principle of stabilising and not increasing the numbers at risk, with a pragmatic awareness of the limited land available for development in the UK.

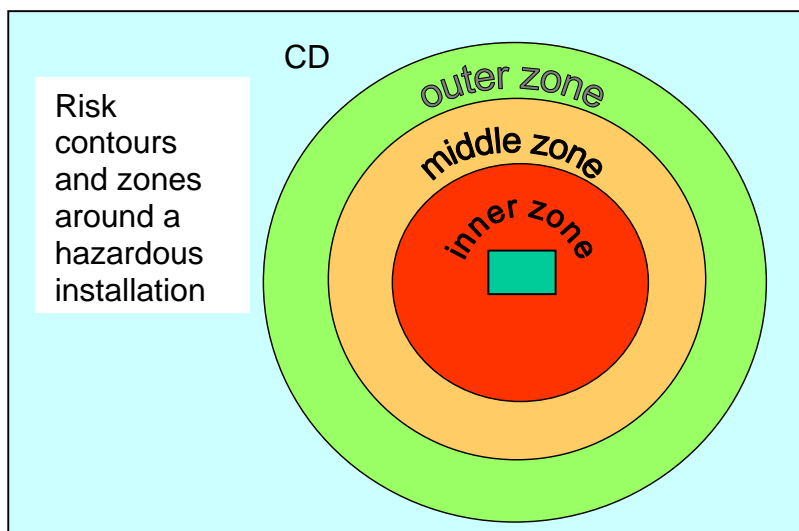
3. It is important to note that HSE's role in the land use planning system is advisory. It has no power to refuse consent or a planning application. It is the responsibility of the HSA or LPA to make the decision, weighing local needs and benefits and other planning considerations alongside HSE advice, in which case they should give HSE advance notice of that intention. LPAs may be minded to grant permission against HSE's advice. In such cases HSE will not pursue the matter further as long as the LPA understands and has considered the reasons for our advice. However HSE has the option, if it believes for example that the risks are sufficiently high, to request the decision is 'called in' for consideration by the Secretary of State, in England and Wales (a very rare situation). In Scotland, if the planning authority is minded to grant permission they have to notify the Scottish Ministers who can decide to call-in the application.

CONSULTATION DISTANCES AND RISK CONTOURS

4. Using consent information, HSE undertakes a detailed assessment of the hazards and risks from the installation and produces a map with three risk contours representing defined levels of risk or harm which any individual at that contour would be subject to. The risk or harm to an individual is greater the closer to the installation. In each case the risk relates to an individual sustaining the so-called 'dangerous dose' (see definition right) or specified level of harm. The three contours

Dangerous dose would lead to:

- Severe distress to all;
- A substantial number requiring medical attention;
- Some requiring hospital treatment; and,
- Some (about 1%) fatalities.



represent levels of individual risk of 10 cpm, 1 cpm and 0.3cpm per year respectively of receiving a dangerous dose or defined level of harm. The contours form three zones (see left), with the outer contour defining the CD around major hazard sites. The PA consults HSE on relevant proposed developments within this CD.

HOW HSE GIVES ADVICE

5. When consulted, HSE firstly identifies which of the three defined zones the proposed development is in. Secondly, the proposed development is classified into one of four “Sensitivity Levels”. The main factors that determine these levels are the numbers of persons at the development, their sensitivity (vulnerable populations such as children, old people) and the intensity of the development. With these two factors known, a simple decision matrix is used to give a clear ‘Advise Against’ (AA) or ‘ Don’t Advise Against’ (DAA) response to the PA, as shown below:

Level of sensitivity	Development in Inner Zone	Development in Middle Zone	Development in Outer Zone
1	DAA	DAA	DAA
2	AA	DAA	DAA
3	AA	AA	DAA
4	AA	AA	AA

Sensitivity Level 1 - Example: Factories

Sensitivity Level 2 - Example: Houses

Sensitivity Level 3 - Example: Vulnerable members of society e.g. primary schools, old people’s homes

Sensitivity Level 4 - Example: Football ground/Large hospital

DAA means **D**o not **A**dvice **A**gainst the Development

AA means **A**dvice **A**gainst the Development

THE “PADHI” SYSTEM

6. The decision matrix above was developed taking into account the experience of 30 years of HSE advice on LUP. It is built into a software tool known as PADHI (Planning Advice for Developments near Hazardous Installations) introduced in late 2002. PADHI deals with the vast majority of consultations and is operated by staff in local HSE field offices, significantly speeding up responses from previous arrangements which required some specialist HSE resource.

TECHNICAL ASSUMPTIONS UNDERPINNING HSE METHODOLOGY FOR LAND USE PLANNING

7. **The installation:** The quantities and properties of hazardous substances, and the descriptions of storage and process vessels, are assumed to be in accordance with the ‘hazardous substances consent’ entitlement for the site since this represents a duty holder’s declaration of their entitlement to store such substances which could be introduced at any time. For each type of development HSE’s advice to planning authorities will take account of the maximum quantity of a hazardous substance permitted by a hazardous substances consent and any conditions attached to it. Best cautious, but not pessimistic, assumptions concerning substances, locations, operating conditions and surroundings are used. For operations not described in the consent (e.g. numbers and sizes of road tanker operations, pipework diameters, pumps and other fittings) site-specific values are obtained as necessary.

8. **Hazardous events:** All foreseeable major accidents are considered and a representative set of events which describe a set of circumstances which, for that installation, could lead to an accidental release of hazardous substances.

9. **Consequences:** The previously described 'dangerous dose' concept is generally used to describe the extent of the impact of any hazardous event on the surrounding population. Protection provided to persons by being sheltered within buildings is generally taken into account by the approach, as is the likelihood of persons being outdoors at the time of the incident.

10. **Ambient conditions:** Local weather data is used to provide wind and stability information around the installation. Further, the surroundings are generally assumed to be flat although ground roughness can be taken into account where circumstances require it.

11. **Risk assessment:** The calculations produce contours of the frequency that a typical house resident would be exposed to a dangerous dose or worse. This is generally expressed in terms of 'chances per million per annum' or cpm for short, i.e. 10CPM, 3CPM and 0.3CPM.