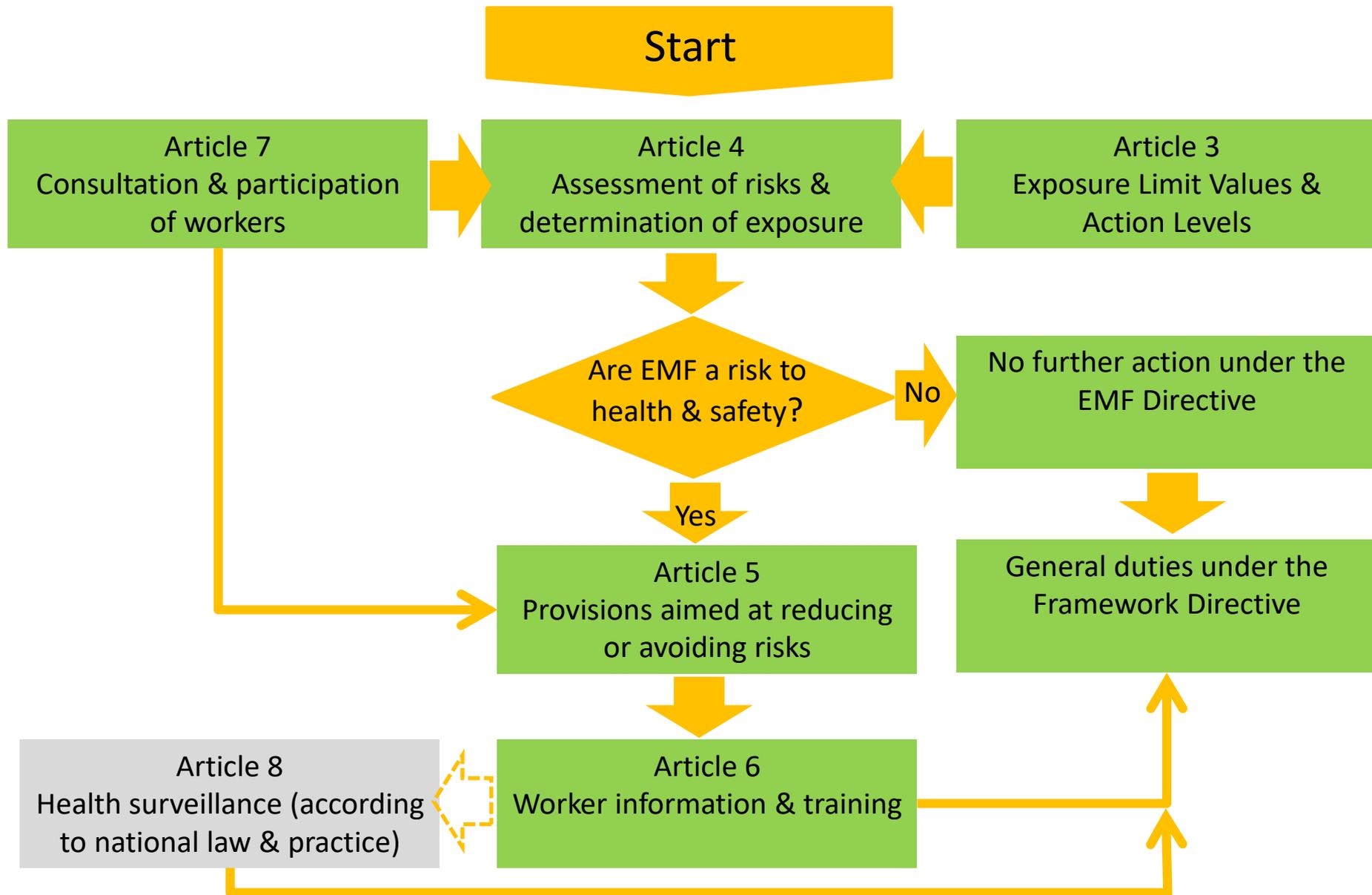


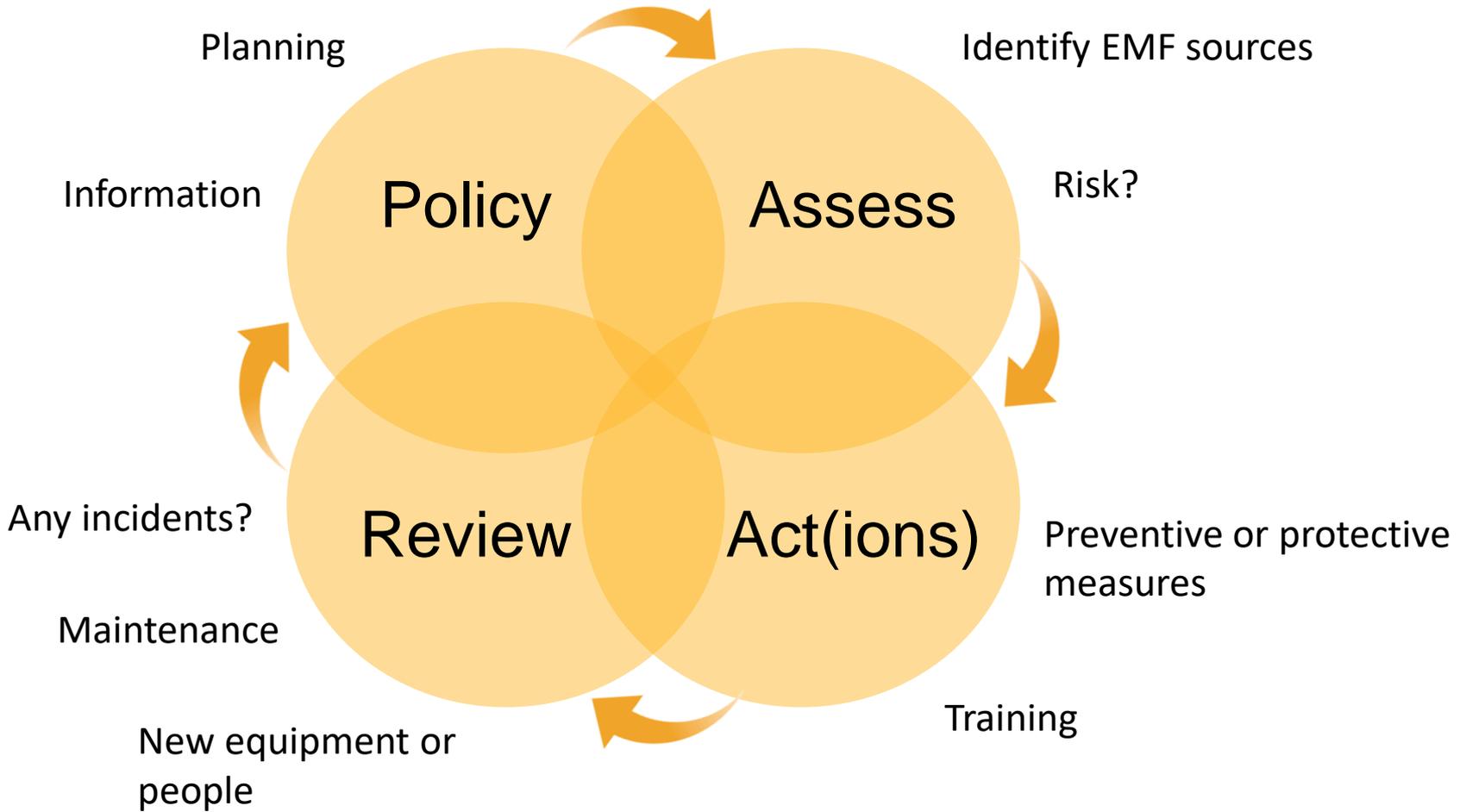
Implementation of CEMFAW Regulations

Articles of Directive 2013/35/EU



Where to start?

It's a cyclical process but a good place to start is to identify sources. A key point is to at least keep this stage in-house. Consultants will find it difficult to identify all sources especially at larger sites



Sources

- Induction heating
- Resistance welding
- Plastic welding / dielectric heating
- Electric vehicle charging
- Non destructive testing
- Scientific / research
- Radar
- Navigation beacons
- Broadcast

Not an exhaustive list, just examples where we have encountered field strengths that require some further action



Sometimes odd things happen...

Persons at particular risk

- Pacemakers
- Body worn pumps
- Cochlea implants
- Passive implants; plates, pins, screws
- Pregnant workers

Again not an exhaustive list, just examples where we have been involved in assessments specifically for workers at particular risk

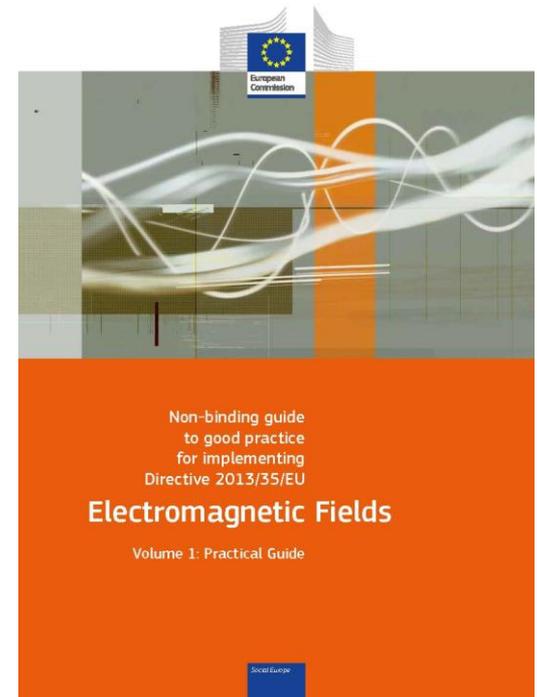
Case study



Always note if measurement equipment is calibrated and has a full specification; frequency sensitivity, isotropy, temperature response, linearity etc. It sets a big chunk of the uncertainty associated with the measurement. Uncertainty becomes increasingly important the closer levels become to 100% of ALs etc.

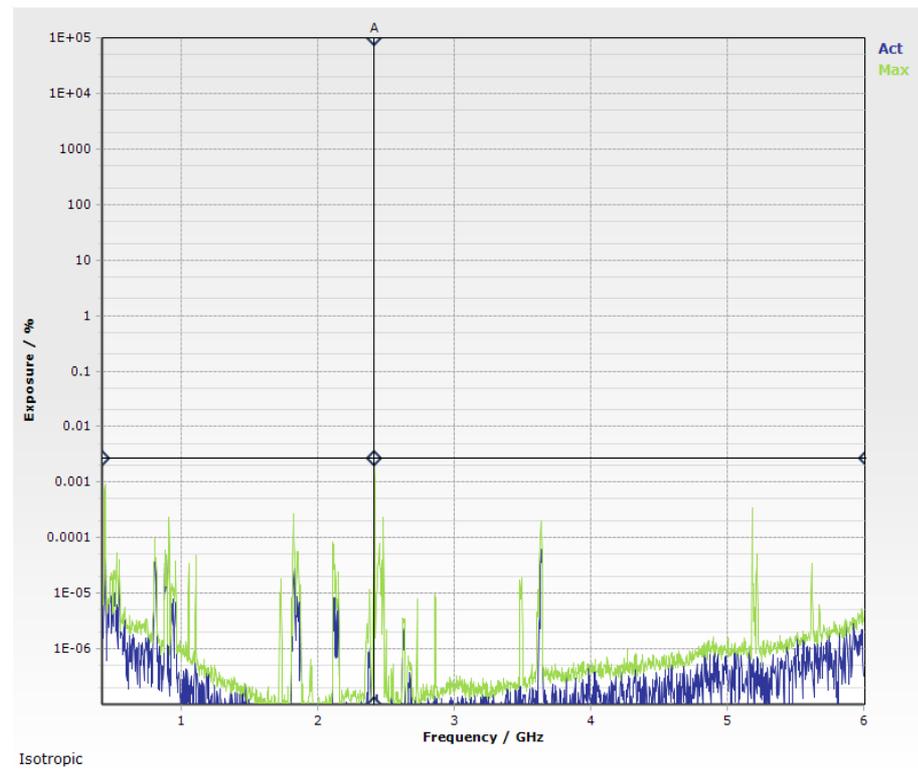
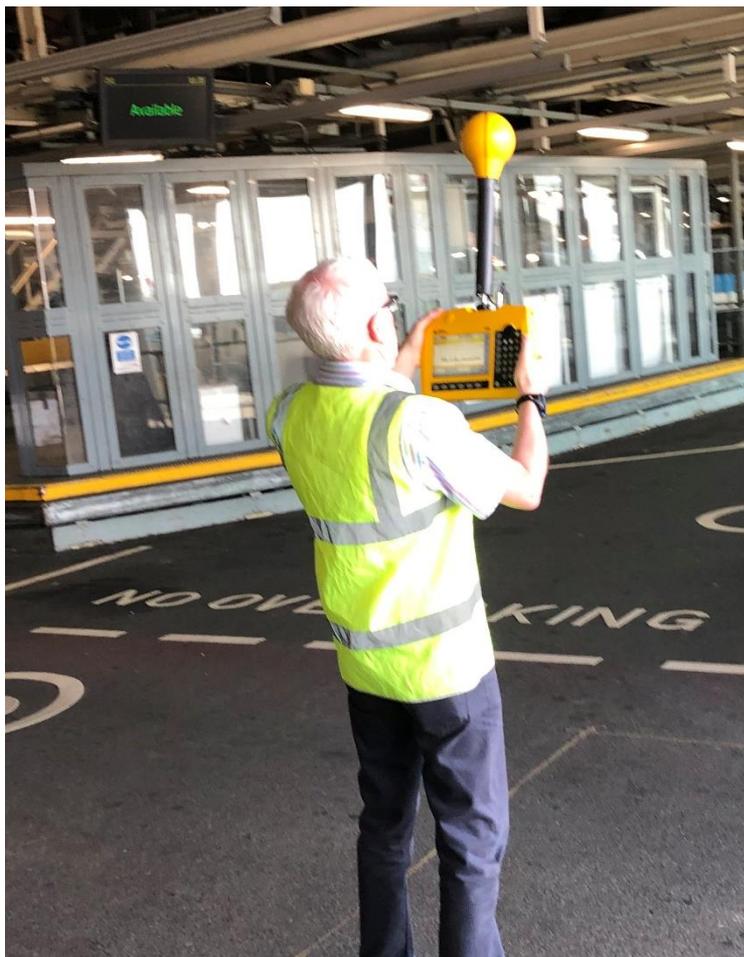
Case study

- Provides a list of generic work activities where fields are so weak that there is no risk so once employers have performed an initial risk assessment no further action will be required.
- Lists work activities that are likely to require more detailed assessments for workers and workers considered to be at particular risk i.e. those with body worn medical devices and pregnant workers.



The Practical Guide should be the first port of call for any EMF assessment, it can save a lot of time and money if the equipment or activity has already been assessed

Case study



Max. recorded value; 0.00266% of ICNIRP 1998 GP at 2413.7 MHz

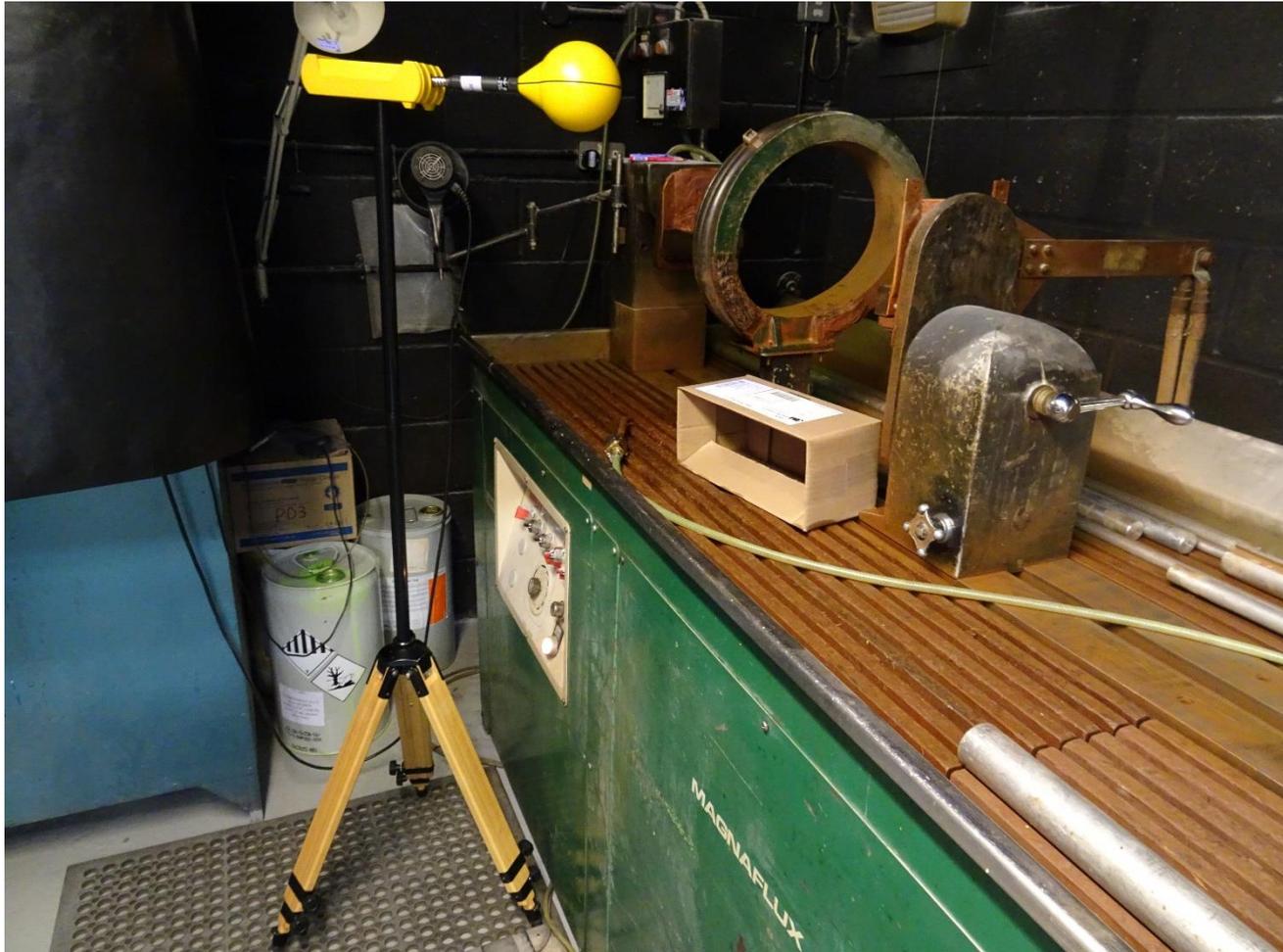
Measurements of low level sources can help with risk perception issues but otherwise add little to the information contained in the Practical Guide

Case study



Max. values recorded 140% of ICNIRP GP 20cm from charging cable and 141% of ICNIRP GP 20cm from control panel.

Case study



Max. values recorded 103% of Low AL & 200% of ICNIRP 1998 GP
in operator torso location

Case study

Outcome:

- EMF safety policy?
- Need to identify workers at particular risk
- Specific risk assessment for workers at particular risk
- Seek information and advice from equipment manufacturers

If you have EMF workers i.e. employees who may be exposed above general public levels then you probably need an EMF safety policy but keep it simple. You'll also need to be able to identify any workers considered to be at particular risk and have suitable control measures in place.

Don't do costly and time consuming assessments if you can get information from equipment manufacturers. They have a duty to provide suitable EMF safety information.

Manufacturer obligations

- Manufacturers should provide sufficient information so that customers know how to use equipment and comply with regulations.
- Manufacturers routinely confuse EMC with human exposure and provide no suitable information.
- Manufacturers often unaware of relevant equipment standards (IEC, CENELEC, BSI).
- Always push manufacturers to provide appropriate information. Suppliers of machinery have a legal obligation to ensure emissions are not hazardous to people.

HSE Exemptions

Exemptions permit exposures above ELVs however the following conditions still apply;

3) a) the exposure of employees to electromagnetic fields is as low as is reasonably practical; and

b) Employees are protected against any health effects and safety risks arising from that exposure.

There is sometimes confusion about 'derogations' or 'exemptions'. They permit exposure beyond ELVs but employees must still be protected against adverse effects. Exposure should still be kept to a minimum and reduced where possible i.e. the process outlined in the Regulations/Directive still has to be followed.

Summary

EU Framework Directive version of hierarchy of control

Principles of prevention specified in the Framework Directive:

Avoiding risks

Evaluating risks that cannot be avoided

Combating risks at source

Adapting work to the individual, especially as regards the design of the workplaces, the choice of work equipment and the choice of work production methods

Replacing the dangerous by the non-dangerous or less dangerous

Developing a coherent overall prevention policy that covers technology, organisation of work, working conditions, social relationships and factors related to the working environment

Giving collective protection priority over individual protective measures

Giving appropriate instructions to workers

A large, dark, skeletal radar antenna structure stands against a cloudy sky. The structure is composed of a complex metal framework supporting a large, circular parabolic dish. The dish is divided into a grid of smaller sections. Above the dish, there is a smaller, rectangular structure. The entire antenna is mounted on a tall, dark tower. In the background, there are some low-rise buildings and a utility pole. The sky is filled with large, dark clouds, suggesting an overcast day. The overall tone is somewhat somber and industrial.

Any Questions?