

8. Pressure management

8.1 Design of pressure management areas (PMAs)

Selection of districts for pressure reduction should proceed hand-in-hand with the auditing of existing districts and the setting up of new ones. Much of the district proving required for pressure reduction must also be carried out for the proving of DMAs. However, it may not always be possible to combine pressure reduction and DMA proving. Therefore this section can be used to set up pressure management areas (PMAs) independently of DMA proving.

The main objectives of pressure control in DMAs can be summarized as follows:

- reducing losses from existing and future leaks and bursts;
- reducing the frequency of bursts.

There are some subsidiary benefits, although schemes are rarely implemented within DMAs in order to achieve them, such as:

- reducing pressure to customers;
- reducing the pressure variations to customers;
- reducing pressure-dependent demand;
- protecting mains with low pressure ratings from bursts.

Selection and implementation of a PMA goes through the stages shown in Fig. 8.1. These stages are described in greater detail in the following subsections.

Initial scheme design

Schemes can be designed in two stages, with a selection process after the first stage, or in one process if no selection is to be carried out.

Schemes can include:

- new pressure-reduced areas;
- extensions to existing PMAs;
- existing PMAs with new control systems;
- boosters supplying one part of an existing or new PMA to allow further pressure reduction in another.

In a supply zone with several existing DMAs the potential for pressure reduction of whole DMAs can be examined by assessing pressures at critical points and AZNP points in zones.

Data from other sources can be used to assess schemes on a smaller scale. Data sources could include:

- asset management planning (AMP) studies;
- regulatory pressure monitoring points;
- network models and modelling field measurements;
- local knowledge;
- customer complaints;