

Establishing a baseline for staffing levels

Through a 'Nuclear Baseline', nuclear licensees are required to demonstrate that they have suitable and sufficient organisational structures, staffing and competencies in place to effectively and reliably carry out those activities that could impact on nuclear safety.

In comparison to the minimum staff complement, the baseline takes account of the full range of activities, which if not adequately managed, could lead to an immediate or latent detriment to process safety. If staffing levels fall below those identified in the baseline, or work demands increase, safety could be affected, and the organisation should have contingency measures in place to address the potential consequences of any shortfall and develop plans to fill the gaps (e.g. recruitment, redeployment, reducing or delaying work, or the use of contract resource). Another purpose of the baseline is to provide a clear description of the currently intended staffing levels as a reference point against which to assess the potential impact of organisational changes on the control of major accident hazards.

The methodology to establish the baseline for staffing levels involves:

1. Identifying the roles related to the control of major accident hazards; for example, roles that involve: carrying out or supporting operations; design, manufacture, inspection, testing and maintenance of safety-critical plant and equipment; the management, control and supervision of processes and people; contributing to the preparation of the safety case and advising on safety standards; and responding to incidents and emergencies.
2. Identifying the number of individuals needed to discharge the safety roles and setting out the number of individuals in place to carry out these roles;
3. Demonstrating that the competence needs of staff with roles that impact upon safety are understood and staff are competent to discharge their roles (e.g. with reference to the competence assurance system);
4. Demonstrating that there are enough people with the right competencies to fulfil safety governance arrangements; and where this involves the support of others outside the organisation, an intelligent customer function is retained;
5. Justifying the baseline through the use of meaningful leading performance indicators to monitor the health of the organisation's staffing levels and competence (e.g. backlog of work, excessive hours, quality of work output, and others as appropriate);
6. Assessing the vulnerability of the resource and competency profile (e.g. taking account of demographics, impending retirements, singleton roles, roles held by contractors, potentially conflicting roles) and demonstrating that succession plans, and where appropriate, contingency plans are in place;
7. Describing the process in place through which the baseline is derived and managed; and
8. Maintaining the baseline as a living document, updating it as changes are made to the organisational structure, staffing levels and competence requirements.

Again, from such information, a useful set of principles could be drawn to help those working in other industries with major accident hazards to consider the adequacy of baseline staffing levels, and the process used to establish the baseline. They could also help inform an appraisal of organisational change plans, particularly where there are concerns about the organisation's scrutiny of existing staffing levels ahead of the change.

The Nuclear Installations Inspectorate note that it would not be practicable to undertake detailed task analysis to underpin the resource/competence allocation for all activities within the scope of the baseline. For roles with a high potential impact on nuclear safety, formal task analysis may be required to demonstrate the reliability of task performance and adequacy of proposed or existing staffing arrangements. However, greater emphasis is placed on the use of relevant performance indicators to monitor the adequacy of baseline staffing levels (e.g. backlog of maintenance work, excessive hours, and quality of work outputs).

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