

The Delicensing of Nuclear Licensed sites in the United Kingdom

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CONCLUSIONS

Delicensing is allowed under NIA65 and as used here includes ending the Licensees period of responsibility. HSE has published criterion and guidance for the interpretation of 'no danger' for the purposes of delicensing. This is a stringent test and presents a number of challenges for the licensee to demonstrate. HSE will undertake the assessment and inspection of Licensee arrangements and safety documentation and only if it is satisfied allow sites or parts of sites to be delicensed. In the past few years, sites and parts of sites have been successfully delicensed against the HSE published criterion.

INTRODUCTION - Licensing

- Required under Section 1 of the Nuclear Installations Act 1965 (as amended)(NIA65). Licenses can be granted, varied and revoked, Section 3
- For certain operations, noting the site is licensed not the operation
- Allows HSE to attach conditions related to safety, Section 4

INTRODUCTION - Delicensing

- Licence can be varied to exclude part of site, Section 3
- Licence can be revoked or surrendered, Section 4
- In either case the licensee will still retain a 'period of responsibility'
- The 'period of responsibility' begins with the granting of a licence and continues until:
'That in the opinion of HSE there has ceased to be any danger from ionising radiations from anything on the site (or part thereof); Or
A new nuclear site licence is granted in respect of the site'

INTRODUCTION - Period of Responsibility

- In the absence of a licence and for the duration of the period of responsibility HSE can "...give to the licensee such directions as the Health and Safety Executive may think fit for preventing or giving warning of any risk of injury to any person or damage to property from ionising radiations from anything remaining on the site" and
- the licensee / ex-licensee still has liability for injury or damage affecting third parties under the insurance provisions of the NIA65
- It can survive the termination of the licence

CONSIDERATION OF NO DANGER

- Not defined in the NIA65.
- Until 2008 delicensing applications were decided on a case by case basis, that the area to be delicensed was indistinguishable from local background, 'radio-geology'.
- In 2005, following HSE Policy development and consultation led to the 'HSE Criterion for delicensing Nuclear Sites', HSE May 2005 (<http://www.hse.gov.uk/nuclear/delicensing.pdf>), and subsequently guidance: 'Delicensing Guidance: Guidance to Inspectors on the interpretation and implementation of the HSE policy criterion of no danger for the delicensing of nuclear sites, HSE August 2008', (<http://www.hse.gov.uk/nuclear/delicensingguide.pdf>)

APPLICATION of 'NO DANGER' CRITERION

- Applying this to nuclear licensed sites, any residual radioactivity, above the average natural background, which can be satisfactorily demonstrated to pose a risk less than one in a million per year, would be 'broadly acceptable' so
- For practical purposes, therefore, we will use this criterion as the basis of what we regard as 'no danger' for the purposes of Sections 3(6)(b) and 5(3)(a) of NIA65. Compliance with this criterion would normally mean that HSE can remove the site from regulatory control under NIA65 - i.e. allow the site to be delicensed.

GUIDANCE/STANDARDS

- Using currently accepted risk co-efficients, 1 in a million equates to a dose of the order of 10 µSv/y.
- Published documents on models for residual nuclide specific activities in Bqg-1 or Bqm-2 giving rise to doses of the order of 10µSvy-1 include RP122 and RS-G-1.7.
- HSE guidance recommends using RS-G-1.7 as the basis of comparison with residual activity, however, Licensees can develop their own criteria to meet HSE policy criterion though these will require to be robustly based
- Overarching ALARP requirements should be considered which may amount to justifying there are no more low cost clean up measures
- ONR will rigorously assess all delicensing proposals and inspect Licensee arrangements as appropriate.

Demonstration of 'no danger'

REGULATORY APPROACH - what is needed

- Delicensing safety case
- History and use of the land/building, reason for delicensing
- Management and disposal of any radioactive waste
- Documentation, records, results of radiological surveys,
- Incident logs, events, spills etc,
- Assessment of dose based on conservative assumptions regarding reasonably foreseeable future use to demonstrate that any future use of the land meets delicensing criterion.
- BUT
- Measurements will form an important part of the evidence

Demonstration of 'no danger'

REGULATORY APPROACH

- Early interaction between the licensee, the EA and HSE;
- Documents and work progress are discussed at regular intervals, including drafts and work in progress;
- Early assessment of supporting documents will facilitate the assessment of the final safety case so there are

NO Surprises

Demonstration of 'no danger'

REGULATORY APPROACH

- HSE will have an independent sampling survey of the licensees work and monitoring, including sample analysis.
- Intent is to give the regulator confidence in the licence's process used to demonstrate with their own criteria and NOT to reproduce the work done by the licensee.
- HSE will undertake assessment and inspection of the licensee arrangements and safety case in order to reach a judgement on the acceptability of removing the site from regulatory control under NIA65.

Challenges

Requirement to remove all sources of radiation from the site before delicensing, even if to be used on that site subsequently (legal advice provided to HSE).

- There is no provision to ignore some things that are on the site, to do so would be outside vires, an improper exercise of power and the delicensing decision would be unlawful.
- May need to move sources to adjacent site, delicense and then return them, double handling is this ALARP?
- If there is no adjacent site, the site will have to be delicensed in stages to allow the sources to be moved off the part of the site being delicensed, so this problem is not intractable and has been successfully done.

Challenges

Drains and buried structures

- If active drains are to be left in situ how will the demonstration of 'no danger' be made?
- Techniques and equipment have been developed allowing drains to be videoed, surveyed and sampled to inform decisions on their removal or retention allowing delicensing to take place while leaving drains in place if appropriate.

Challenges

- ONR are leading a project to review the potential for delicensing with a proviso of the subsequent use of the site.

Challenges

Techniques

- For remediation of sites and demonstration of 'no danger' the methods and instruments used are not necessarily the same as those used in operational radiation protection.
- This means that new approaches are needed to ensure that the demonstration is properly done and that an adequate safety case and references can be produced to support the delicensing application.
- In a number of cases licensees have successfully completed the decommissioning, sampling and surveying, and submitted a delicensing application demonstrating 'no danger'.