

HSE NII Delicensing



STUART JOHNSON

UNIT 2F

NUCLEAR DIRECTORATE

HSE/NII

Contents



LICENSING

DELICENSING OF NUCLEAR SITES

REGULATORY APPROACH

EXAMPLE OF SITE DELICENSING

Licensing



The NIA65 sets out the requirements for the Licensing of a nuclear site. The mechanisms by which a licensed nuclear site may be removed from licensing requirements are:

Relicensing to change site operator

Variation for part of the site

Revocation or surrender of the site licence

Licensing



- The Licensee's right to surrender the licence is not constrained by any qualifying conditions providing the site is no longer being used for any activity which should be licensed
- The surrender or revocation of the license does not itself end the Licensee's period of responsibility
- The NIA65 does not require a Licensee to delicense all or any part of its site – until this is done continued maintenance of the site under the licence will be required

Period of responsibility



The period of responsibility begins with the granting of a licence, and continues until

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

Significance of 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 NIA65
- it can survive the termination of the licence



Idealised time line

Period of Responsibility (NIA65)

- Green field site
 - Licence granted/Period of Responsibility begins
 - construction
 - commence operation
 - cease operation
 - decommission
 - Licence surrendered
 - Period of responsibility ended
- Green field site



End of period of responsibility

- HSE must be satisfied that:
 - There is 'No Danger' from ionising radiations from anything on the site or part thereof.
 - Applies for any reasonably foreseeable use of the site

Consideration of ‘No Danger’



Historically based on demonstration that the part to be delicensed is indistinguishable from background;

Policy development and consultation led to an HSE Policy Statement that:

Based on the reasoning laid out in HSE publication ‘Reducing Risk and Protecting People’, HSE considers that an annual risk of a fatality of one in a million to an individual is regarded by society as ‘broadly acceptable’

Consideration of ‘No Danger’



- 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 practicable purposes HSE uses 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.



Interpretation of 'No Danger'

- As the NIA65 does not provide a definition of 'No Danger', HSE has published a policy statement 'HSE criterion for delicensing nuclear sites' setting out its approach to judging when risks have been reduced sufficiently to satisfy the 'No Danger' requirement.

<http://www.hse.gov.uk/nuclear/delicensing.pdf>

- Using the currently accepted risk co-efficients a risk of 1 in a million equates to a dose of the order of 10 µSv/y



HSE Guidance

- Further information is provided in 'Delicensing guidance – Guidance to inspectors on the interpretation and implementation of HSE policy criterion of no danger for the delicensing of nuclear sites'

<http://www.hse.gov.uk/nuclear/delicenceguide.pdf>



HSE Guidance

The HSE guidance recommends using the values in RS-G-1.7, 'Application of the Concepts of Exclusion, Exemption and Clearance'

Licensees free to develop their own criteria to meet policy criterion

HSE will expect these to be robustly based and will rigorously assess such proposals



Secondary criteria

Need actual measurable quantities, in
 Bqg^{-1} or Bqm^{-2} :

Published documents on models for residual activities giving rise to doses of the order of $10\mu\text{Sv}\text{y}^{-1}$ include RP122 and RS-G-1.7:

Nuclide specific values:
Some are above SoLA exemption levels.



Example RS-G-1.7 values

H3	100	Bq/g
Cs137	0.1	Bq/g
Co60	0.1	Bq/g
Pu	0.1	Bq/g
Sr90	1	Bq/g
C14	1	Bq/g



Regulatory approach

Licensee's application supported by a safety case

Reason for delicensing, history, use of the land, buildings, identification and assessment of radioactivity within area concerned

Assessment of dose and risk to public following delicensing to demonstrate any reasonably future re use represents 'No Danger'

Management and disposal of radioactive waste



ALARP

- HSW74&IRR99 require operators to ensure that risks to health and safety are reduced so far as is reasonably practicable, generally known as the ALARP principle.
- HSE expects that overarching ALARP requirements are considered
- It may amount to justifying there are no more low cost clean up measures
- Generally, if HSE judges that the operator has demonstrated that the one in a million risk of a fatality criterion has been met due to the material left on site, this will usually be sufficient

What evidence is required?



History of the use of the site/buildings

Documents, building surveys, historical events and incident logs, spills etc,

However, monitoring, sampling, analysis and assessment will form an important part of the evidence.



Solicitor's advice

The NIA is clear about danger from "anything" on the site.

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.



Impact of solicitors advice

Facility contained sources used to calibrate instruments:

Would be used following delicensing;

To allow delicensing to occur the sources had to be moved off the site at the time when the variation was signed; and

Returned to site following delicensing and appropriate EA registrations and authorisations.

Independent survey



To support the NII assessment of the safety case and supporting documents:

- Contracts set up with the Health Protection Agency
- Meetings between licensee, NII, HPA and EA to determine scope and progress

Independent survey



- Intent to give the regulator confidence in the licensee's process used to demonstrate with their own criteria
- NOT to reproduce the work done by the licensee in its entirety
- The independent survey is a sample only

Example of good interaction



Early interaction between the licensee and EA and NII;

Documents and work progress discussed at regular intervals, including drafts and work in progress;

Early assessment of supporting documents facilitates assessment of the final safety case:



**NO
Surprises**

Delicensing Sites



Delicensing has/is taking place at a number of sites including:

- Harwell, Pilot Area, EAF and NGA
- Scottish Universities, East Kilbride
- ICI Billingham, research reactors
- Berkley, partial delicensing
- Maynard Centre, Cardiff

Example site Maynard Centre, Cardiff



- Nuclear Site Licence (green) proposed variation (red)



- The licensee has submitted 'Clearance in Principle' reports as the project has progressed
- HSE has provided 'Agreement in Principle' assessments
- The licensee will submit a safety case at the end of the project requesting a variation of the nuclear site licence

- Documentation has been written with a view to demonstrating compliance with the HSE criterion
- The Licensee has set their own target criteria, using RS-G-1.7
- The licensee opted to go below the values required to meet the HSE criterion where this was shown to be the ALARP option.
- The Licensee has generated dose assessments demonstrating the one in a million, 10 u/yr has been met if RS-G-1.7 are exceeded



Maynard Centre other requirements

- NIA65 requires consultation with environment agency
- 'Frozen arrangements' to demonstrate that re-contamination had not occurred
- Maps / plans – for attachment to a Variation
 - need to show the area delicensed and the residual licensed area
 - Marking of the new licensed site boundary
- Retention of records



Summary for Maynard Centre

The project has progressed well to date with clearance and agreement in principle documents issued and agreed

HPA independent monitoring confirms that Licensee conclusions are appropriate

Final 'sample' to confirm adequacy of the 'Frozen arrangements'

Licensee submission for a variation of nuclear site licence expected in 2011

And finally



- Any questions?