DELICENSING

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PERIOD OF RESPONSIBILITY

Period of responsibility
Begins with the granting of a licence

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

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 the NI Act
- it can survive the termination of the licence

To end the 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’

The HSE published the criterion for delicensing nuclear licensed sites following public consultation.

- The criterion interprets the meaning of ‘no danger’ in NIA65 for the purpose of releasing a licensee from his period of responsibility.
- The criterion states:

‘On the basis of existing, published guidance, HSE considers that an additional risk of death to an individual of one in a million per year, is ‘broadly acceptable’ to society.

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.

- This represents a dose of the order of 10μSvy-1. This is a stringent criterion to meet.

SECONDARY CRITERIA

Need actual measurable quantities,

Bqg^{-1} or Bqm^{-2}:

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

Nuclide specific values are consistent with EPR 2010 (England & Wales) but not with RSA 93 and its exemption orders (Scotland)

HSE GUIDANCE

HSE has produced guidance on the values to use

Recommend using the values in RS-G-1.7

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

REGULATORY APPROACH

Delicensing safety case

History and use of the land/buildings

Reason for delicensing

Management and disposal of any radioactive waste

What evidence is required?

History of the use of the site/buildings

Natural background levels for comparison & your justified action levels

Documents from building surveys, maps showing variations, Incident logs, spills, instrument calibration & monitoring records, staff SQEP records, survey sheets etc,

BUT

Measurements will form an important part of the evidence

Any record could be subject to inspection

Independent verification

- The Health Protection Agency, HPA, under contract to ONR has been used on many occasions to undertake radiological monitoring, including surface contamination surveys, radiation surveys, sampling, analysis and assessment of radioactivity on a number of licensed sites.
- ONR will also consult the relevant environment agency and Government Departments as necessary.
- Once an area has been cleared by the site for delicensing, control access and be prepared to demonstrate it had not been re-contaminated.

INDEPENDENT SURVEY

- To support the ONR assessment of the safety case and supporting documents;
- Contract with the Health Protection Agency;
- Meetings between licensee, ONR HPA and EA to determine scope and progress
- 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.

PRACTICALITIES OF JUDGING NO DANGER

- Early interaction between the licensee, the EA and ONR. Lay out overall sampling plan and strategy.
- Regularly discuss documents and work progress, including drafts and work in progress;
- Early assessment of supporting documents facilitates the assessment of the final safety case.

Practicalities

- ONR would give particular attention to drains and other underground features such as structures and soakaways.
- ONR would expect plans of underground features to be available in the safety case, e.g. active drains, non-active storm drains, surface water drains, and sewers.
- There should also be an analysis to show that the licensee has a good understanding of the underground drainage system, and whether there is a theoretical possibility that activity could flow back from active drains under abnormal conditions into the non-active drains.
- Knowledge of contaminated land & groundwater and the hydrogeology is also important as activity from elsewhere on site or neighbouring site might migrate into the site or part of the site that is to be delicensed. Where active (or formerly active) drains are present details of the jointing of the pipes together with information on any detected leaks should be provided. Even where there is some confidence that drains were non-active ONR would usually ask the licensee to justify this by suitable and sufficient inspection and monitoring as appropriate.

Items remaining on the delicensed site

- All radioactive sources have to be removed from the site at the time of delicensing, even if returned later once an EA permit is in place.
- One licensee removed the majority of their drains apart from in those areas where it would be technically difficult to remove them, for example under buildings and where areas of protected plant life would have to have been removed. In these cases, the drains were monitored, characterised and grouted with an assessment made showing the most exposed person in the worst case scenario would not receive a dose greater than 10μSv per annum.
- Similarly this kind of assessment has been made in cases where buildings were to remain on the land for reuse. In such cases the requirement for independent verification of these analyses becomes key and licensees usually find it is advantageous to engage with their regulator at an early stage.

An example of successful working between the Licensee/ONR/HPA

- Licensee to reduce footprint of the existing Nuclear Licensed site to ~10%. Regular meetings held between the Licensee, ONR, EA and the HPA (the ONR independent contractor).
- Licensee documentation written to demonstrating compliance with the HSE criterion. The Licensee generated dose assessments demonstrating the one in a million, 10 µ/yr has been met if RS-G-1.7 values are exceeded.
- During the project the licensee submitted a number of 'Clearance in Principle, CIP,' reports to ONR for a number of buildings where remediation has been completed. The HPA independent monitoring confirmed that the Licensee conclusions and ONR issued 'Agreement in Principle, AGIP,' assessments for a number of the cleared buildings.
- The Licensee instigated a number of measures – 'frozen arrangements' - to prevent re-contamination of cleared areas. The Licensee will submit a safety case at the end of the project requesting a variation of the nuclear site licence. A final 'sample programme' of monitoring and surveys of the site will be undertaken to confirm adequacy of the 'frozen arrangements' at this time.
- Good project progress to date with a number of CIP and AGIP documents issued and agreed. A live 'Agreements and Assumptions' document has been generated during the project, recording the key principles and agreements made, activity limits for delicensing, Licensee targets, progress of remediation actions and a record of the dose assessments made.

NO

Surprises

Office for Nuclear Regulation

An agency of HSE

Particular features

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.

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.

List of sites where delicensing has taken place

- Oldbury Power Station,
- Risley Reactor
- Scottish Universities Research Reactor Centre at East Kilbride (SURRC)
- Berkeley Centre site
- Harwell
- Winfrith
- GE Healthcare Cardiff Laboratories, with sides of 100 metres).
- Springfields
- ICI Triga Reactor and Isotope Preparation Facility, Research Reactor, Billingham,Cleveland
- Capenhurst Works,
- Trawsfynydd NPS,
- Consort Reactor, (Imperial College of Science & Technology University of London), Silwood Park, Ascot, Berkshire
- Neptune Reactor, Raynesway, Derby, Rolls Royce Marine Power Operations Ltd,
- Hartlepool NPS
- Heysham NPS,
- Vickers Test Rig Installation Fissile Material, South Marston, Swindon,
- Devonport Royal Dockyards,
- Rosyth Dockyard Fuel Storage & Handling,

Other requirements

- Consultation with the appropriate environment agency
- 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

Useful References

- ‘HSE Criterion for Delicensing Nuclear Sites’ http://www.hse.gov.uk/nuclear/delicensing.pdf
- “Delicensing guidance - Guidance to inspectors on the interpretation and implementation of the HSE policy criterion of no danger for the delicensing of nuclear sites” http://www.hse.gov.uk/nuclear/delicenceguide.pdf
- Clearance & Exemption Principles, Processes and Practices for Use by the Nuclear Industry, A Nuclear Industry Code of Practice http://www.unece.org/fileadmin/DAM/trans/radiation/docs/UK_exemption.pdf
- IAEA Safety standards series; Application of the Concepts of Exclusion, Exemption and Clearance, No. RS-G-1.7

  http://www-pub.iaea.org/MTCD/publications/PDF/Pub1202_web.pdf

SUMMARY

- Have a plan for delicensing of a site
- Engage with regulators early.
- Follow the guidance and ask for advice from ONR’s delicensing specialists.
- Keep good records.
- No surprises.