

# Moving from tenant to nuclear licence holder on a GB Nuclear Licensed Site

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Tradebe Inutec is a specialist provider of radioactive waste treatment and recycling solutions; It has been a tenant on the Winfrith Nuclear Licensed Site in Dorset, for 22 years. The historical nuclear research and development facilities on the site are being decommissioned as part of the UK nuclear decommissioning programme, which has led to Inutec applying for its own Nuclear Site Licence.

This has proved to be a long process, involving the management of numerous stakeholders; ensuring compliance with extensive and complex regulations; and having to interweave the negotiations with a range of other activities related to the purchase of the land and the buildings. This article, therefore, examines the key challenges involved; how these were overcome; and the lessons learnt during the lengthy application process.

**Keywords:** Tradebe, Inutec, nuclear, licence, licensed, application, site, Winfrith, ONR, NDA, Magnox, regulator, regulations, inspector, stakeholders, EA, BEIS, tenant, radioactive, waste, treatment, recycling, decommissioning, de-designation.

## Introduction

Tradebe Inutec provides specialist solutions for the treatment and recycling of radioactive waste. The company is a subsidiary of Tradebe, an international leader in waste reclamation and recycling solutions. It has been operating as a tenant at its site in Winfrith, Dorset, for many years and provides the widest range of low-level waste (LLW) and borderline intermediate level waste (ILW) treatment services in the industry.

However, recent developments led the company to apply for its own Nuclear Site Licence. This will enable Tradebe Inutec to deliver unique solutions relating to the management of radioactive low-level waste. It will also enable it to continue to develop its strategic role in the nuclear industry by supporting the nuclear power generators and accelerating the UK's nuclear decommissioning scheme.

The licensing process has proved to be both complex and lengthy, involving a wide range of challenges, not least because this is the first operating site to go through the Nuclear Licensing process for at least 15 years. This paper will therefore explore the key challenges faced and some of the lessons learnt along the way.

## The Background

Tradebe Inutec has been providing commercial radioactive waste treatment services, primarily to the UK nuclear industry and other radioactive waste producers, for over 30 years.

It is currently based within the Winfrith site, which is owned by the Nuclear Decommissioning Authority (NDA). As the licence holder, another company, Magnox Ltd, has been responsible for the management of the site.

Although the site is currently licensed, the nuclear facilities are now being decommissioned and much of the site is being returned to heathland. The bulk of this work should be completed by 2021, and the responsibilities of the current licensee, Magnox Ltd, should come to an end circa 2023.

Tradebe Inutec wants to continue its work on the site, and this was one of the main driving forces behind the company's decision to apply for a standalone Nuclear Site Licence to cover the receipt and processing of bulk quantities of radioactive matter. This is required in order for the company to continue its operations in line with the Nuclear Installations Act 1965 and the Nuclear Installations Regulations 1971, as there will no longer be any other licensed facilities on the site.

Tradebe Inutec currently treats waste from the decommissioning activities on the Winfrith site and from all the UK major nuclear waste producers, including EDF, Magnox Ltd, the Ministry of Defence (Dockyards and Aldermaston), and a wide range of non-nuclear (small volume producer) customers, including hospitals, universities, museums, schools and industrial users of radioactive materials.

The company's strategic importance as an independent radioactive waste service provider to the UK nuclear industry is well established. The primary activity at Winfrith involves the receipt of radioactive waste, its processing and treatment and its subsequent consignment to authorised waste disposal sites for disposal or for further treatment.

## The Challenges

Tradebe faced a number of significant challenges both before and after its decision to apply for a Nuclear Site Licence. The actual timeline, showing when each of the key elements of the process took place, was as follows:

2013	2014	2015	2016	2017	2018	2019
Tradebe acquires Inutec Ltd	Confirmation that Tradebe Inutec needs a Licence	Development of licence application documents in consultation with ONR	Formal licence application	ONR interactions to establish that Tradebe Inutec is ready to be licensed.  Regular liaison meetings with key stakeholders (TI, ONR, NDA, BEIS, Magnox)		Tradebe Inutec achieves Nuclear Site Licence

Figure 1. Timeline of the licensing process

### Challenge 1: Pre-requisites for Licensing

Tradebe Inutec already has an established track record for operating within a Nuclear Licensed Site. The process of applying for a licence was therefore slightly different from that faced by a new build (i.e. a company coming into the industry, involving a full project cycle, etc.). As a tenant, most of Tradebe Inutec’s interactions with the nuclear regulator, the Office for Nuclear Regulation (ONR), have previously taken place through the Winfrith site licence holder and landlord. As a licensee, the company will be liaising directly with the regulator – although the ONR already had a good knowledge and understanding of Inutec’s operations.

The ONR’s mission is “to provide efficient and effective regulation of the nuclear industry, holding it to account on behalf of the public.” It independently regulates nuclear safety and security at 36 nuclear licensed sites in the UK. It ensures that the nuclear industry controls its hazards effectively, has a culture of continuous improvement and maintains high standards. The regulator also oversees the decommissioning of nuclear sites and co-operates with international regulators on safety and security issues, including any associated research.

The basic nuclear site licensing process is exactly the same whether it involves a radioactive waste management company (such as Tradebe Inutec) or a new energy supplier that is building a nuclear power station on a new build site. The only difference is that the regulator ensures that the correct degree of proportionality is applied in terms of the relative risks and hazards involved.

There is comprehensive regulatory guidance available on how to apply for and gain a licence and this had to be taken into account and distilled into the elements that were applicable to Tradebe Inutec. One of the major challenges that the company faced was the need to fully understand the specific criteria that was required of it as an organisation and operator of a lower hazard nuclear facility compared with that required of a major new build nuclear power generating company.

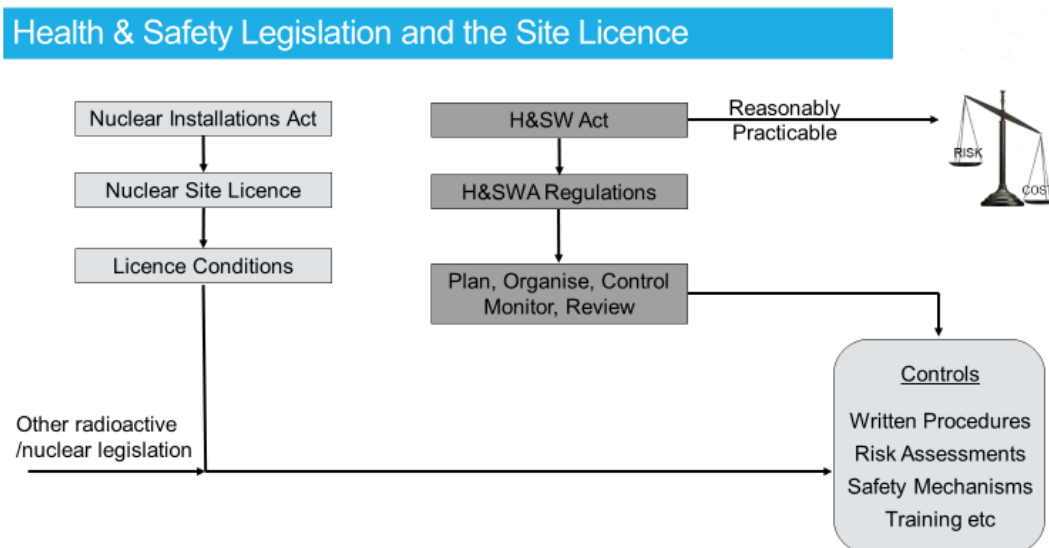


Figure 2. Key regulations involved in a licensed site

The diagram above shows some of the key legislation applicable to a Nuclear Licensed Site.

The key items include the Health & Safety at Work Act 1974 and subsequent regulations; the Nuclear Installations Act 1965/1969; Environmental Permitting Regulations 2016; Ionising Radiations Regulations 2017; Radiation (Emergency

Preparedness & Public Information) Regulations; Nuclear Industries Security Regulations 2003/2006; and the Nuclear Safeguards Act 2018.

The company conducted a study on whether to operate with or without the licence. It was acknowledged that it could operate without a licence. However, this option would both limit and reduce the amount of radioactive materials it could handle and hold on the site. Furthermore, it would also restrict future growth opportunities.

During the process of deliberation, the regulators were also reviewing and revising the criteria for the operational activities and holding of quantities of radioactive material, which form a vital element of the need to operate under a nuclear licence.

## **Making a Start**

The first document that Tradebe Inutec produced therefore looked at why the company needed to be licensed. The conclusion was that if the company wanted to be able to expand its business, it needed to be based on a licensed site. This in itself brings with it a higher degree of regulation.

One of the underlying prerequisites for licensing is that the company needs to demonstrate it is a corporate body with the right structure to manage the licence effectively. It must also have a sufficient degree of autonomy from its parent company in order to meet the requirements of the nuclear regulations.

As a result, Tradebe reformed its Board structure to meet the ONR's expectations. The Site Managing Director has direct responsibility for the licence. The number of Executive Board Directors and independent Directors had to be greater than the number of non-executive Directors. This was needed to demonstrate that Inutec Ltd is able to exercise independence from its parent company. Reaching a satisfactory position required a considerable amount of interaction between the regulator and the Board of Directors.

The regulator's assessment covered aspects such as the company's governance, the Board of Directors, safety policies, programmes, processes and procedures.

However, because the company had already been operating to the requirements of a nuclear licence, its systems, policies and procedures were already aligned to ensure compliance with the key licensing conditions, even though this was through a third party. This enabled it to start the application process from a strong position (1).

Although Inutec had been operating as a tenant, a cultural shift was required, as becoming a licensee meant that the company would have the ultimate and sole accountability for safety and compliance. Before obtaining the Nuclear Licence, Magnox, the licensee, had the overarching responsibility for the nuclear safety of Inutec as tenants.

The ONR also has specific licence conditions (36 LCs) relating to aspects such as competence, training and emergency preparedness, change management etc (2). Inutec Ltd had to demonstrate not only that it was ready in terms of its operations but also in relation to the future decommissioning of the site. It had to have a plan of how it will eventually decommission the site, even if that is unlikely to happen for many years.

Ultimately, the ONR decided that the operations that Inutec carried out were sufficient grounds for the company to need a Nuclear Site Licence.

## **Challenge 2: The Licence Application**

Following initial discussions with the landlord's nuclear site inspector, the next step of the process involved Inutec formally writing to the ONR's Chief Nuclear Inspector to inform him that it was about to embark on the licensing process. This was important, as the application also represents a major project and resource demand for the regulator.

Although the licence application is managed through the site regulator, the ONR uses its own technical teams to assess different aspects of the licence. Two of the key issues they covered included identifying the type and amount of resources that they would require and then providing Inutec with an estimate of the time and considerable costs involved in terms of the regulatory input. The application process itself involves a significant cost, including many hundreds of days of the regulator's time.

Following this, Inutec held a meeting with the Chief Nuclear Inspector and some of his team to initiate the application process. The team appointed a Project Manager on behalf of the regulator whilst Inutec appointed its own Project Manager. Formulating the programme proved to be a lengthy procedure. The application process began in earnest in 2014 and the formal application to the ONR was submitted in April 2016. The original process was expected to take two years, but it actually took longer than this due to its complexity.

## **Challenge 3: Purchase of the Site**

One of the reasons for the lengthy licence application process was that in addition to applying for the licence, Inutec needed to have either a very long lease on the site or to own the buildings and the land. It subsequently decided that the best course of action would be to acquire the site from the NDA.

The process of the sale of the land and the associated management of the legacies and the transfer of the nuclear legacies was a lengthy procedure. Delays with the sales process also meant that the regulatory aspects inevitably took longer to resolve. Ownership of the land therefore became a key factor in determining the overall timescale involved, along with the regulatory interactions.

The purchase of the land was made more complex due to the involvement of the NDA as the landowner and Magnox as the licence holder, which required additional approval steps. The NDA is an executive non-departmental public body, established to ensure the safe and efficient clean-up of the UK's nuclear legacy.

As mentioned previously, Magnox is also in the process of decommissioning the site. An important part of the purchasing and licensing process involved an application to the Environment Agency for the partial transfer of an Environmental Permit (EPR) from Magnox to Inutec. This led to the production of a joint report from Inutec and Magnox outlining the justification for the partial transfer. As part of the sales process, Inutec would assume full liability for the future decommissioning of the facilities and any land remediation that would be required. It would also be responsible for the eventual return of the site to a delicensed and approved end state at some time in the future (3).

In December 2018, the three parties involved in the site purchase - Inutec, the NDA and Magnox - exchanged contracts. This will lead to the ownership of the land being transferred to Inutec. At the time, Inutec commented: "The acquisition of part of the Winfrith site represents another vital milestone in the process of becoming a new standalone Nuclear Licensed Site operator in the UK. Our dedication to achieving this status underlines our commitment to conform to the highest possible standards of security, safety and environmental sustainability. It also confirms our long-term commitment to developing our skills and capability as a centre of excellence for waste management in the UK and overseas nuclear sectors."

#### Challenge 4: Management of Multiple Stakeholders

##### Internal and External Stakeholders Map



Figure 3. A map of the stakeholders involved in the licensing of the Winfrith site

Another key challenge was the management of the many different stakeholders involved in the licensing application process. Two of the main stakeholders have already been mentioned – the ONR and the NDA. Another important aspect that helped to ensure the public's involvement in the licensing process was the Winfrith Site Stakeholder Group. This provided a useful route by which Inutec, the regulator and the NDA could have interactions with the public. It has enabled the public to be aware of the different stages of the licensing process and to raise any concerns or issues.

These types of relationships are a crucial aspect of the application process. The Winfrith site is well established and the public was already fully aware that the historical research and development facilities are in the advanced stages of decommissioning. They were also informed in the early stages of the application process that Inutec operations would be continuing after the closure of the rest of the site and that the company intends to operate under its own Nuclear Site Licence. Inutec has held a number of Open Days and continues to work closely with the local community. The company has kept the local stakeholder group regularly informed from the early stages so that they have always known how the process has been proceeding. The stakeholder group has been very supportive.

A further stakeholder is Dorset County Council. Inutec has held a number of discussions with the Council on various planning issues, although these might not be directly related to the licence. These have included three key elements: planning for redirecting the site effluents; and gaining planning permission for installing new facilities for transferring the company's liquid waste to Tradebe's base in Fawley, Hampshire, for discharge into Southampton Water. These two aspects involved discussions with both Magnox and Wessex Water to find the most suitable solution. The third aspect involved discussions with the Council

about Inutec's plans for new buildings on the Winfrith site. The company wants to develop two strategic areas of its operations – technology and research and development/production facilities.

Although many of Inutec's interactions have involved the ONR, another key stakeholder is the Environment Agency (EA). Although the ONR drives the licensing process and grants the licence, the Environment Agency has its own parallel process. Inutec has carried out a significant amount of work on its own environmental permits and the transfer of the land and permits from Magnox to be sure that it meets all of the EA's requirements. It also kept the local stakeholder group informed. As part of due process, the application for the partial permit transfer was put out for public consultation by the EA. The agency ultimately had to confirm with the ONR that the company could meet all of the environmental requirements (4).

A critical part of these requirements is that the site has to have the relevant environmental permits for waste transfer and aerial and liquid discharges. The Environment Agency was aware that as the eventual nuclear licence holder, Inutec would have sole responsibility for the management of land, facility and associated waste liabilities. With this in mind, the EA also had to satisfy itself, that as a licensee, Inutec would be suitably informed and equipped to deal with all potential nuclear/radioactive liabilities from an environmental protection perspective.

Another stakeholder in the process is Euratom. This is an organisation that ensures that all sites account for all of the nuclear materials that they store and process. After Brexit, that responsibility will pass to the ONR. Until now, Inutec has always accounted for its nuclear materials to Euratom through its landlord, but this will change once it becomes the licensee.

### Challenge 5: Licence Approval

With the transfer of the ownership of the Winfrith site to Inutec being agreed, the final steps in the application process involved taking possession of the buildings and the land and gaining ministerial approval for the licence from the Secretary of State for the Department of Business, Energy and Industrial Strategy (BEIS). This also included the de-designation of the land at Winfrith from the NDA by the Secretary of State at the end of January 2019.

As part of the licence application process, Inutec needed to gain approval from BEIS that it had appropriate arrangements for nuclear liability insurance that would meet the regulatory requirements based on internationally agreed criteria. Now at the end of the process, BEIS's approval for the acceptance of the sale of land and the transfer of liabilities is another vital step, in tandem with approval from the ONR.

The ONR's approval includes a series of readiness inspections of Inutec, focusing on factors such as nuclear safety and security, knowledge and competency. Some of the inspections and compliance with the licence conditions had to be revisited in the final year of the process, due to the unavoidably extended timescale of the overall process. Inutec has passed all of these inspections, which further increases the confidence of the company's employees, the public, the stakeholders and the ONR that Inutec is ready to become a Standalone Nuclear Site licensee.

Finally, ONR sets a grant date followed by a short period of time before it comes into force. The plan for Inutec involved the Chief Nuclear Inspector granting the Nuclear Site Licence by signing it on 1st February 2019 so that it would come into force on 11th February. To be aligned with this, the ministerial de-designation needed to take place in parallel before 8th February 2019 to ensure that the whole process could be finalised.

### Lessons and Best Practices Learnt from the Licensing Process

**Building relationships.** A key point that was learnt early on in the process was the importance of building good working relationships with all of the stakeholders, and especially the ONR. This included building strong relationships with the regulator's project lead and assigned team of specialist technical assessors, who carried out the assessments and inspections. The regulator has issued comprehensive guidance related to the application process, with every licence condition having its own set of guidance documents. Inutec has worked closely with the ONR throughout the process and the ONR has been very supportive in providing invaluable interpretation of the guidance, whilst maintaining a rigorous and challenging approach to the overall assessment process.

**Proportionality and transparency.** A vital aspect of the ONR's advice was that the regulator provided very helpful guidance on proportionality and how to interpret the criteria in relation to Inutec's specific conditions. In terms of radioactive materials, the company is regarded as having a low-level hazard rating.

A transparent approach between Inutec and the ONR and all stakeholders has been another beneficial and valuable factor in achieving a successful outcome.

**Timing and buy-in.** The company learnt that in relation to the process, good timing was imperative throughout. However, it was also very important to have the buy-in of the stakeholders. They have helped the company throughout the process and particularly in the final year of the application. Inutec held a number of meetings with the different stakeholders during the process.

**Communication.** Communicating the benefits of the licence and the various activities that were taking place during the process to all of the stakeholders was very important. It was also important to establish trust with them by ensuring that any communications were both open and frequent. This included holding conversations with the ONR, EA, NDA and Magnox several times a week. Any issues had to be addressed in a timely manner, involving an inclusive dialogue with stakeholders.

These interactions with the stakeholders had to be managed carefully. There were many important aspects involved, including the purchase of the site. This was very complex, with issues such as lease extensions and agreement of liabilities having to be

sorted out. This not only involved dialogue with each of the stakeholders but also with the lawyers who represented them. This all required a great deal of energy and sheer hard work.

In summary, the licensing process depended on Inutec providing as much information as possible; supplying the relevant resources; ensuring that someone was always available to answer any queries; and also clarifying the expectations, timings and any changes that were likely to occur. Ultimately, involving the stakeholders in all of the decisions was key to the process of securing a successful outcome to the licence application.

## References

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