



Office for
Nuclear Regulation

Chief Nuclear Inspector's themed inspection on the management of ageing facilities

Summary report

2022



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Foreword



I explained in my annual report on Great Britain's nuclear industry earlier this year that key regulatory themes will be prioritised and will be the focus of our regulatory attention. One of those priority themes is the sustained effective management of ageing facilities, and I commissioned this Chief Nuclear Inspector's themed inspection to determine whether there are sustainable programmes for the management of ageing facilities to ensure the continued safety and security of the nuclear industry.

Since highlighting the need for attention in this area, I have drawn confidence from the response of the industry towards improving its arrangements.

During the inspection, my inspectors made note of several good practices from the representative sample of licensees included in the scope of the themed inspection. They also identified a number of common thematic challenges that are likely to affect most, if not all, of the GB nuclear industry. It is evident from the intelligence gained during the inspection that ageing facilities will remain an enduring challenge for dutyholders across the sector that will require sustained focus and investment to ensure their continued safe stewardship.

The findings highlighted by this report present an opportunity for the industry and its senior leadership to learn, share experiences, and work together to ensure the continued effectiveness of their ageing management arrangements. As the independent nuclear regulator, we will continue to enable the broader collaboration and cooperation that will influence improvements in the management of ageing facilities, ensuring that the standards of nuclear safety that the public expects are appropriately maintained.

In addition to the findings emerging from the themed inspection, I am pleased to note the self-awareness that has been demonstrated by the licensees, particularly in recognising their strengths and weaknesses, and in turn where improvements need to be made. Strong self-awareness is a crucial component towards providing ONR with confidence in a licensee's arrangements for the safe management of ageing facilities.

As the independent regulator we will seek to continuously improve our effectiveness towards ensuring continued safe and secure operations in the industry. My inspectors' proactive approach to benchmarking and learning from various industries, in addition to producing specific guidance on ageing management, supports our vision to be a modern, transparent regulator delivering trusted outcomes and value.

This short report provides a summary of the key findings and conclusions from the themed inspection. The complete set of findings can be found in my full inspection report [CNI themed inspection ageing facilities report.pdf](#).

Mark Foy

Chief Executive and Chief Nuclear Inspector

1. Chief Nuclear Inspector's themed inspection on the management of ageing facilities

A Chief Nuclear Inspector's (CNI) themed inspection differs from more routine ONR inspections in that they are specifically identified and commissioned by the CNI. The purpose is to inform the CNI's position on a specific regulatory matter that is of a strategic nature, for example, having high, current, or potential safety, security, or safeguards significance, or having the potential to adversely impact public confidence in the safety or security of the GB nuclear industry.

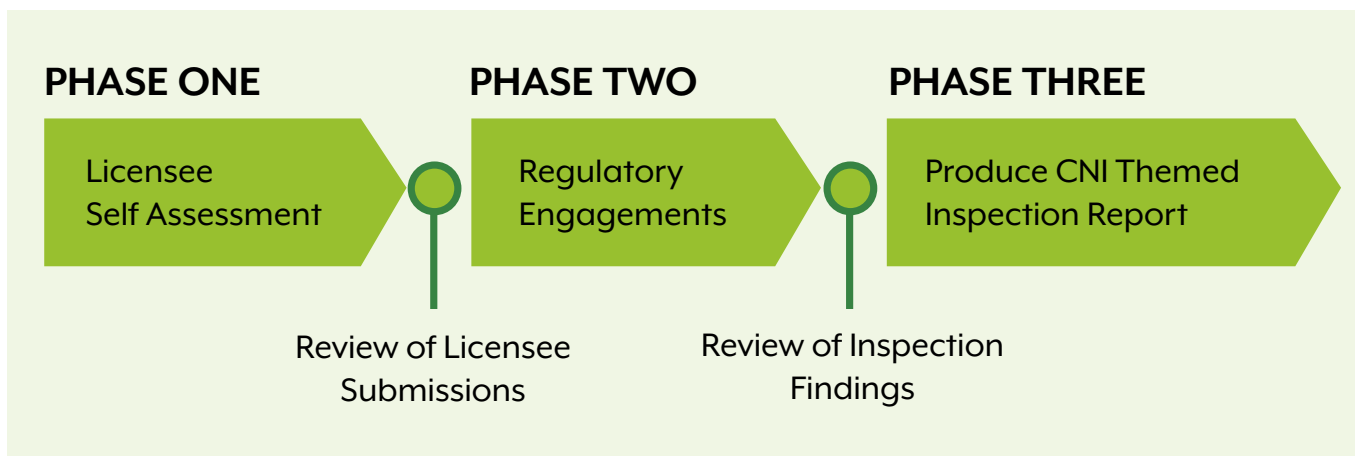
A CNI's themed inspection will usually involve engagement at a senior level and may involve multiple sites and dutyholders, as well as other stakeholders with an interest in the matter being inspected. It may include visits and engagements internationally.

The regulatory priority on effective management of ageing facilities was first highlighted in the CNI's annual report in 2019. We have allowed reasonable time for industry to reflect and, where appropriate, to act on that report. This themed inspection was commissioned to provide confidence that there are sustainable programmes for the management of ageing facilities, and to examine the extent to which relevant good practices have been adopted.

This themed inspection included within its scope a representative sample of the industry. The licensees and sites included in the scope of the themed inspection were:

- The Atomic Weapons Establishment (AWE Plc) sites at Aldermaston and Burghfield;
- Devonport Royal Dockyard Limited's (DRDL) Royal Dockyard at Devonport;
- EDF Energy Nuclear Generation Limited's (EDF NGL) Sizewell B Power Station;
- Magnox Limited's Hinkley Point A site; and
- The Sellafield site operated by Sellafield Limited.

This themed inspection focused primarily on licensees' arrangements as they relate to the management of safety and security assets. Whilst we did not review the licensees' arrangements for the management of safeguards assets explicitly, safeguards inspectors attended a number of inspections. The observations made by the safeguards inspectors will factor into potential future ONR work streams. Though safeguards was not explicitly included in the themed inspection, the findings of this report will also need to be considered by dutyholders in the context of safeguards equipment ageing management.



The themed inspection has been carried out in three main phases:

PHASE ONE - the licensees included in the scope of the themed inspection were invited to complete a self-assessment against a specified set of themes and criteria. The licensee self-assessment provided each licensee with the opportunity to review its arrangements and to provide a response as to whether they believe that they have adequate arrangements to address each theme.

PHASE TWO - our inspection teams completed a series of confirmatory inspections, by which, site inspection teams sampled, reviewed, and assessed the implementation and effectiveness of the licensees' arrangements in situ.

PHASE THREE - the findings and outputs of the inspection have been reviewed with common thematic challenges and good practices being identified. Recommendations to our licensees have been made as well as our expectations for further action.

2. Themes of a sustainable programme for ageing management

Four themes were included in the scope of the inspection for licensees to consider. Each theme was accompanied by criteria which, together, would give a good indication as to whether or not effective and sustainable arrangements are in place. The criteria were underpinned by a set of questions exploring specific aspects of the licensees' arrangements in more detail, having been developed against relevant good practice and recognised industry guidance on ageing management.

Licensees were asked to complete their self-assessment against the following themes:



Effective strategies for the characterisation, monitoring, trending, and analysis of ageing, at facility, system and component level are present.



Commitment to ensure that the right level of organisational capability to sustain specialist safety case and other technical capability to substantiate ongoing safe operation.



Methods to identify and manage obsolescence in facilities for their operation design life and any potential lifetime extensions.



Sustained focus and commitment to ongoing investment in plant, people and processes concerned with aging management.

3. Inspection activities

This themed inspection comprised a number of separate engagements across the five licensees. Depending on the past performance, extant divisional work, and size of the site, engagements ranged from one to four separate inspections.

The inspection teams' judgements and themed inspection outputs can be found in the full CNI themed inspection report [CNI themed inspection ageing facilities report.pdf](#).

4. Short summary of key findings

The findings from the themed inspection show some variations between licensees as regards the adequacy of their arrangements for managing ageing assets and in their performance. There were also differences in the extent to which some licensees managed security assets effectively in comparison to safety assets. Where necessary, action was taken at the time to address gaps in compliance. Whilst this variation is representative of the significant challenges the industry faces, multiple examples of good practices were also found through the course of the themed inspection.

Atomic Weapons Establishment (AWE Plc) – Aldermaston and Burghfield

We welcome the focus and commitment invested in ageing management, and recognise the challenges of AWE's future operational demands. These challenges have the potential to compromise the sustainability of this commitment if not adequately planned and managed. We recognise AWE's self-awareness to the challenge of ageing management across its estate and welcome AWE's maturing and ongoing programme of improvements that will support effective ageing management.

We are aware of several recent instances where AWE has recognised potential risks to future operational safety due to ageing plant and equipment, however the proactive measures required to mitigate or prevent the risks from materialising were not always delivered in a timely manner. Whilst further improvements are necessary, we are satisfied that AWE is learning from, and acting on, these experiences, and although challenges persist, the site remains in a safe condition.

We draw confidence from our engagements with AWE and acknowledge the commitment within the organisation to continue to drive lasting improvements on ageing management. The development of ageing management improvement plans, and strategies is encouraging, and AWE's focus and commitment provides us with optimism. However with limited evidence of their effectiveness available, only limited conclusions can be made on the sustainability of AWE's ageing management programme. The effective implementation of improvement plans, and strategies will therefore be an area of our focus, and they will continue to be monitored during our regulatory interventions on AWE sites.

We recognise that achieving and maintaining a consistent level of performance in this area will require significant and sustained resource and focus from AWE through the medium to long term to ensure safety is maintained on its sites. Success is dependent on enhanced asset management performance, delivery of robust safety cases, completion of key new modern standard facilities, and timely decommissioning of redundant facilities; areas which have historically challenged AWE.

We note the substantial challenge faced by AWE to resource, monitor and deliver the ambitious plans for development of its sites and to meet the projected operational demands. We expect AWE to ensure competing priorities are properly considered when making investment decisions and that its prioritisation of projects ensures the continued

safety of its facilities and operations. We expect the various factors considered in such decisions (including ageing management and decommissioning of redundant facilities) will be given appropriate weight.

Devonport Royal Dockyard Limited (DRDL) – Devonport

DRDL faces challenges both organisationally and practically, in terms of the implementation of a sustainable programme for managing ageing facilities. However, we are satisfied that DRDL is making progress towards strengthening its arrangements and is building its programme in line with recognised good practice and with knowledgeable personnel.

DRDL exemplifies the challenges that face an organisation when ageing management has to be introduced retrospectively. A fully integrated ageing management programme will input into decision making, and the prioritisation of resource. An opportunity exists for DRDL to prove the benefits of early and continued integration of ageing management into its new infrastructure projects, such as the 10-dock programme.

We are working to enable DRDL's journey towards a sustainable programme for ageing management, whilst also holding them to account for safety on site. Our regulatory oversight, in addition to routine engagements and inspections, includes regular input to DRDL's organisational accountability and responsibility for safety (OARS) project and oversight of its progress against its nuclear safety improvement plan (NSIP). Our regular engagement with DRDL and input into these initiatives aim to strengthen DRDL's arrangements for safety on its site.

EDF Energy Nuclear Generation Limited (EDF NGL) – Sizewell B Power Station

Overall, both inspection teams were satisfied with the arrangements presented against the themes of the themed inspection and their implementation on site. EDF NGL has demonstrated that it has a culture of continual improvements as regards ageing management, has mature arrangements in place for the management of ageing facilities and has experienced personnel to implement them at Sizewell B.

With the exception of a number of minor shortfalls or suggested improvements no formal regulatory action was necessary.

Magnox Limited – Hinkley Point A

Overall, the inspection team found Magnox Limited's arrangements for the management of its ageing facilities to be adequate at Hinkley Point A, and proportionate to the low hazard and risk posed by the defuelled reactors. Whilst the arrangements were found to be adequate, some shortfalls were identified. The inspection team was provided with the arrangements as well as evidence to support those arrangements. The inspection team saw that Magnox Limited was aware of the challenges that it faces and have seen demonstrable improvements from the station to meet these challenges and strengthen their arrangements for managing their ageing facilities.

Whilst the arrangements are judged to be adequate, a number of shortfalls were identified by the inspection team, for which improvements must be made. To ensure that arrangements are sustainable Magnox Limited must continue to be self-aware and proactive in addressing challenges. In particular, Magnox Limited should commit to fully integrating security into the ageing management arrangements, and ensure that process and capability are in place to support management of security assets.

Sellafield Limited – Sellafield Site

Sellafield Limited faces ageing management challenges due to the age and complexity of some of its legacy and other facilities. The Sellafield site requires a wide range of expertise to manage ageing facilities and the hazards that they pose. We continue to engage with Sellafield Limited on the numerous challenges the site faces that have led to it being placed in significantly enhanced attention. For the majority of the inspections conducted as a part of this themed inspection, the inspection teams found Sellafield Limited's arrangements to be adequate with some shortfalls identified. Likewise, Sellafield Limited's implementation and effectiveness of its arrangements was deemed to be broadly adequate, with some areas for improvement identified. Regulatory issues and advice have been issued to encourage Sellafield Limited to improve its arrangements and implementation. These will be tracked through to completion.

The management of ageing security assets was discovered to be an area with significant shortfalls. As such, proportionate enforcement action has been taken through the use of an enforcement letter. Ensuring that the management of security assets is integrated to the site wide arrangements for ageing management is an important part of Sellafield Limited establishing a sustainable and adequate ageing management programme.



CNI, Mark Foy, on a visit to the Sellafield site. Image courtesy of Sellafield Limited

5. Thematic common challenges

In addition to determining whether there are sustainable programmes, this inspection has sought to identify common thematic challenges that are likely to be generic across much or all of the industry.

The regulatory priority, from which the commission for this themed inspection stems, has been raised as a consequence of continued reports of challenges and shortfalls across the nuclear industry as regards ageing management. Our increased regulatory attention on the appropriate management of ageing facilities will continue until we are satisfied sufficient and sustainable improvements have been made.

It is an aim of the themed inspection to highlight common thematic challenges identified through the themed inspections, to signpost them to the industry, and to encourage the industry to reflect on, and work together collectively to address, as they will benefit from a collaborative industry approach.

Common challenge 1 – Ensuring sustainable capability and skills necessary for the management of ageing

The majority of the licensees included within the scope of this themed inspection have experienced challenges in maintaining the capability and specialist knowledge required to adequately manage their ageing facilities. The appropriate management of ageing facilities is built upon the foundation of a skilled and capable work force. A programme for the management of ageing facilities cannot be considered truly sustainable whilst critical knowledge and skill sets are not being cultivated, captured, and transferred and where there is a lack of resilience in capability to do so.

Common challenge 2 – Implementation of sustainable funding models for ageing management

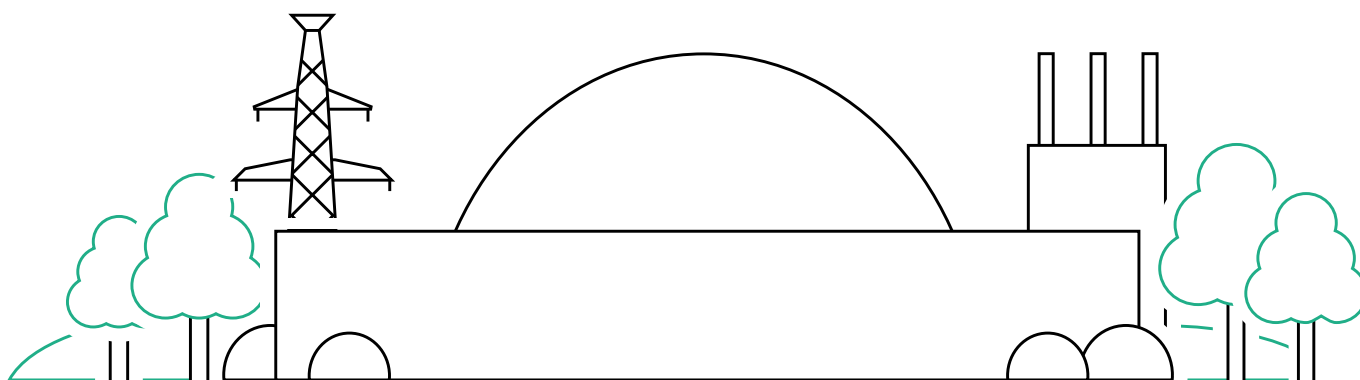
The management of ageing facilities represents an significant costs to all licensees. As facilities age, their personnel require additional training, in the context that standards evolve, the nature of required maintenance may change, and good practices also change over time. The resources and funding available to licensees is finite and must be managed in an efficient, proportionate, and targeted manner. It is, therefore, necessary for licensees to have in place sustainable funding models for the lifetime of the facilities for which they are responsible.

Common challenge 3 – Integration of security into ageing management plans

The management of ageing facilities extends to both the management of assets related to safety and those related to security or safeguards. The assets that secure facilities in our industry are equally important as those that ensure safety, as they also indirectly prevent harm to industry workers, the public and environment.

The following areas for improvement were identified and contribute to this thematic area of challenge.

- Understanding of categorisation and classification of security assets, and how these dictate the corresponding level of management which is required.
- Arrangements and drivers which govern the management of security assets not being aligned to security functional requirements.
- Existing tools and processes for the management of safety assets not being used for the management of security assets.
- Lack of integration between forums where facilities safety and security assets are discussed, prioritised, and managed.



6. Regulatory expectations

This themed inspection should be viewed as a part of our wider strategy for influencing improvements against our regulatory priorities; and an additional means by which we continue to promote, and assess, the sustainable improvements that must be made across the industry for the management of ageing facilities.

Valuable information has been gathered through the themed inspection. This relates to both the management of safety assets and security assets but may also be extended to the management of other types of assets (safeguards, emergency preparedness, etc.).

The good practices shared in this report will provide licensees across the industry with information on potential additional considerations for their own programmes, and how they may be developed. **The good practices and common, thematic challenges highlighted by the themed inspection present opportunities for industry improvement, which licensees need ensure they benefit from and which we will actively monitor to ensure the benefits are being realised.**

The themed inspection highlighted significant variation in the adequacy of the arrangements for ageing management across the licensees sampled and it identified three common thematic challenges that require further attention by the industry. The nuclear industry must continue to effectively manage ageing facilities as a priority and **we expect the industry to collaborate, working together, to ensure the required improvements in ageing management are implemented in a consistent and sustainable manner on their sites, which will ensure the high standards of safety and security are maintained.**

Licensees should take advantage of opportunities for sharing and collaboration on ageing management. The value of sharing operating experience is well understood by the nuclear industry. Good practices that have been developed in one organisation can often be adopted to improve other organisations. Likewise, sharing the experiences which challenge, or have challenged, an organisation can be highly advantageous when solutions are shared across the industry. The scale of the challenge presented by ageing facilities is such as to necessitate sharing and collaboration

The themed inspection, alongside industry sharing and collaboration, will not in isolation deliver the improvements that we believe are necessary. In addition to engaging with our licensees through industry working groups to support their action plans for greater sharing of operational experience and collaboration, we will develop our regulatory strategies to provide further regulatory focus on the appropriate management of ageing facilities. **This will enable us to gather the evidence and assurance we require as the independent nuclear safety regulator.** Our strategy will also ensure the provision of high-quality regulatory advice to the industry.

