



# Office for Nuclear Regulation (ONR) Quarterly Site Report for Urenco UK Limited Capenhurst

Report for period 1 April – 30 June 2015

## Foreword

This report is issued as part of ONR's commitment to make information about inspection and regulatory activities relating to the above site available to the public. Reports are distributed quarterly to members of the Urenco UK Limited Local Liaison Committee and are available on the ONR website (<http://www.onr.org.uk/llc/>).

Site inspectors from ONR usually attend the Urenco UK Limited Local Liaison Committee meetings and will respond to any questions raised there. Any person wishing to inquire about matters covered by this report should contact ONR.

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## 1 INSPECTIONS

### 1.1 Dates of inspection

The ONR Site Inspector and other ONR Inspectors conducted interventions at Capenhurst on the following dates during the quarter:

April	16, 21, 23 & 30
May	13, 14 & 28
June	2, 4, 9, 10, 17 & 18

## 2 ROUTINE MATTERS

### 2.1 Inspections

Inspections are undertaken as part of the process for monitoring compliance with:

- the conditions attached by ONR to the nuclear site licence granted under the Nuclear Installations Act 1965 (NIA65) (as amended);
- the Energy Act 2013
- the Health and Safety at Work Act 1974 (HSWA74); and
- regulations made under HSWA74, for example The Ionising Radiations Regulations 1999 (IRR99), The Construction (Design and Management) Regulations 2007 and The Management of Health and Safety at Work Regulations 1999 (MHSWR99).

The inspections entail monitoring licensee's actions on the site in relation to incidents, operations, maintenance, projects, modifications, safety case changes and any other matters that may affect safety. The licensee is required to make and implement adequate arrangements under the conditions attached to the licence in order to ensure legal compliance. Inspections seek to judge both the adequacy of these arrangements and their implementation.

In this period, routine inspections of the Urenco UK Limited licensed site covered the following:

#### **Nuclear Safety Case.**

Nuclear safety cases are in place for the enrichment facilities at Capenhurst. Nuclear safety cases are kept live by short term reviews, with a full periodic review by the licensee, typically every ten years. The licensee has been engaged in consolidating the nuclear safety case for an enrichment facility, which was commissioned in stages over a number of years. Consequently, the extant safety case for one enrichment facility was also implemented over a number of years. The licensee is consolidating this enrichment facility safety case into a single, consistent nuclear safety case for the entire facility. Aspects of the licensee's methodology and modern standards for producing nuclear safety cases have been subject to extensive recent discussions between the licensee and ONR specialist inspectors, (primarily relating to the emerging Tails Management Facility safety cases, but with implications for the licensee's current review of the enrichment facility safety cases). ONR specialist inspectors have provided regulatory advice to the licensee, which has resulted in the licensee reviewing aspects of the safety case production arrangements. This has resulted in some significant slippage to the licensee's planned timetable for periodic safety case reviews, discussed with the nominated site inspector. The licensee has proposed a broadly acceptable revised

programme for the periodic review of safety cases, which will incorporate recent developments in safety case methodology. Pending the production by the licensee of periodically reviewed safety cases, interim safety cases in the form of “justifications for continued operation” of the enrichment facilities at the site are being compiled by the licensee. The initial interim safety case was initially proposed by the licensee to be sent to ONR for review by the end of June 2015; this reviewed safety case is now due to be sent to ONR by the end of July 2015. It is noted that the licensee is maintaining good progress in promptly implementing the engineering improvements arising from the review of the nuclear safety case.

Aspects of the developing nuclear safety case, justifying the nuclear chemical processes being proposed at the Tails Management Facility, currently under construction on the licensed site, were inspected by a number of ONR specialist inspectors, at several meetings held at Capenhurst with the licensee during this quarter, at which specialist inspectors provided the licensee with regulatory advice on a number of nuclear safety topics.

### **Annual Review of Safety (& Environment), joint intervention with the Environment Agency.**

On 13 May, ONR inspectors participated in the Annual Review of Safety & Environment, with both the licensee and inspectors from the Environment Agency. The licensee had conducted an adequate annual review of safety, appropriately detailed across a broad range of topic areas. Two informative site inspections preceded this meeting, (of the Tails Management Facility construction site, followed by the legacy “Hex Tails” storage array of legacy uranium hexafluoride cylinders). Immediate regulatory advice was provided by ONR regarding some industrial safety shortfalls observed during the inspection of the construction site, which were promptly addressed. ONR concluded that the licensee had conducted an adequate annual review of safety, appropriately detailed across a broad range of topic areas.

### **Emergency Arrangements.**

On 16 April, a specialist fire safety inspector met with the licensee to discuss an organisational change proposal to change the shift pattern of the ‘on site’ Fire & Rescue Service, operated on behalf of the licensee by a contractor. Regulatory advice was provided to ensure that any changes implemented as a result of the proposed organisational change would have no adverse impact on the training regime for the licensee’s ‘auxiliary fire fighters’, (who work in the licensee’s shift operations teams) but work a different shift pattern, which form part of the licensee’s emergency response arrangements.

On 14 May, I participated in a planned meeting of the Emergency Planning Consultative Committee, providing regulatory advice on a range of ‘off site’ emergency planning matters relating to Capenhurst.

In compliance with the licensee’s arrangements, the licensee wrote to ONR to request approval of the proposed changes incorporated into a revised ‘on site’ Capenhurst Emergency Plan in January 2015. This followed the periodic three yearly review of the plan. The application was duly assessed by ONR and a licence condition 11 (emergency arrangements) licence instrument was issued by ONR to the licensee on 29 April.

### **Regulatory liaison meeting with the licensee and the Capenhurst Nuclear Services Limited tenant organisation.**

On 17 June, a constructive regulatory liaison meeting was held between the regulators, the licensee and the Capenhurst Nuclear Services Limited tenant organisation. A meeting was also held to discuss organisational changes proceeding within the Urenco ChemPlants Limited tenant organisation.

## **Leadership and Management for Safety.**

An ONR specialist inspector for Leadership and Management for Safety conducted a site intervention to assess organisational aspects of the two main tenants on the Capenhurst site. Meetings were held with Capenhurst Nuclear Services Ltd (CNS) to initially assess safety culture on the 23 April and with Urenco ChemPlants Ltd (UCP) to consider the implementation of organisational capability arrangements on the 14 May and 4 June.

The intervention was partially initiated in response to a written complaint, which had been copied to ONR. The aim of the intervention was to improve regulatory visibility of the licensee's oversight of the CNS tenant and the CNS tenant's safety culture. A series of meetings were held with the licensee's oversight and independent inspection capability function, as well as the tenant's Managing Director and CNS safety representatives. The intervention identified some positive practices, but also some areas that required further consideration, which will be followed up by ONR later in the year.

On 14 May, a specialist inspector provided regulatory advice at a meeting relating to the Tails Management Facility construction project. UCP was reorganising following the introduction of the UCP Executive Project Director post, changes to the contract model and the resignation of key staff. These changes had resulted in an organisational change split into three phases, the first being implemented before the start of the quarter and the last not expected until later in 2015. The specialist inspector became concerned that the tenant organisation was implementing organisational changes ahead of complying with the licensee's (licence condition 36) organisational capability arrangements. This concern was raised verbally with the licensee and tenant and confirmed in writing by ONR on 18 June. In response, the licensee has undertaken a series of actions to improve the tenant's awareness and compliance with the licensee's relevant site licence arrangements, providing awareness training and providing clarity within the licensee's arrangements of the responsibilities of the tenant organisation. This topic will be followed up by ONR later in 2015.

The specialist inspector also attended site on 9 June, to deliver a presentation to safety representatives from both the licensee and CNS, along with some of the licensee's safety champions. The presentation covered ONR research into organisational factors common to major incidents. The presentation was attended by safety representatives from both the licensee and CNS and was well received.

## **Safety Case for the Tails Management Facility.**

ONR assessment of the TMF Pre-Commencement Safety Reports is progressing, with continuing interactions between the ONR specialist inspector assessment team and the licensee, regarding several aspects of the nuclear safety case. At this stage, the licensee has yet to make an adequate nuclear safety case.

ONR's priority remains to complete its assessment in support of its decisions on (a) whether to grant permission for ME&I installation in vaporisation (b) how to pursue its concerns relating to TMF's deconversion stage. ONR's remaining issues on nuclear safety are criticality, and faults leading to hex releases from autoclaves and kilns.

There had been discussions on criticality safety at Bootle on 16 April and Capenhurst on 18 June. On each occasion, ONR advised that it was difficult to permission installation in the absence of a criticality safety case, which was not programmed by the licensee for sending to ONR until November 2015. As the hazard arises only by the erroneous feeding of enriched material, ONR had debated the possibility of limiting the TMF feed to UK material (which was assessed as representing a lower risk) until such time as a the licensee's analysis of the criticality hazard had been submitted, assessed, and judged to be adequate by ONR.

If permission was to be granted before then, as the licensee had sought, then it was important that ONR now had as much information as possible. ONR therefore proposed another meeting, at which the licensee would describe what measures it proposes to take to prevent criticality in TMF and commit to a date by which it would provide a criticality safety case. This meeting was held at site on 18 June.

The meeting on 16 April had concentrated on the chemotoxic risks from faults in the autoclaves and kilns. ONR followed this with a meeting about the radiological risks, on 30 April at Capenhurst. At that meeting ONR's starting position had been that the safety system protecting against the fault sequence that leads to an autoclave being wrongly opened when full of leaked uranium hexafluoride was of lower integrity than ONR would expect, given the assessed high radiological consequence of this fault. At this meeting, ONR agreed to accept a good Class Two system and ONR asked for the evidence that this would be provided. ONR is now considering that evidence. Overall, ONR remained of the view that the safety case, as initially presented, and as periodically supplemented, was poor. However, with respect to the proposed autoclaves, ONR had concluded that the proposed design and safety provisions were better than the safety case had suggested. As regards the proposed kiln operations, ONR remained of the view that requiring the operator to be in the vicinity of the kiln when it was operating was contrary to the ALARP principle, (i.e. risks being "as low as reasonably practicable").

During the quarter, ONR had also inspected fire safety, organisational change and mechanical engineering. ONR has expressed reservations to the licensee that some organisational changes within the tenant were being made before the relevant safety justification had been completed, contrary to the licensee's arrangements under Licence Condition 36.

In summary, ONR has completed its assessment of the Pre-Commencement Safety Reports (PCSRs) associated with the TMF, and has concluded that in some areas of TMF design the risks to the operator have not been reduced "so far as is reasonably practicable", (SFAIRP). This judgement is being discussed with the licensee to establish what improvements may be required. ONR considers it is likely that some of the regulatory concerns can be addressed by the licensee before active commissioning is started in 2016/7 and ONR will continue to influence the licensee to establish what improvements are required before equipment is installed and commissioned.

### **ONR Safeguards Programme.**

There have been four routine safeguards inspections (Joint Euratom/IAEA) at the UUK enrichment facility during this quarter. Further to these, there have been two Limited Frequency Unannounced Access (LFUA) Inspections (one Type 1, triggered during routine inspection) and one Type 3 (IAEA only called outside of routine inspection). Any issues that have arisen have been satisfactorily addressed.

### **COMAH regulation.**

Capenhurst will become an 'upper tier' COMAH site, when the relevant quantities of designated materials are introduced in to the Tails Management Facility, which is currently under construction on the licensed site. COMAH is regulated by the 'joint competent authority' of ONR and the Environment Agency. The COMAH 2015 Regulations (The Control of Major Accident Hazards Regulations 2015) were implemented on 1 June and regulatory advice continues to be provided to the site, to advise the site of the requirements necessary to comply with COMAH 2015.

## **Construction Design & Management Regulations 2015.**

On 10 June, an ONR specialist conventional health and safety inspector provided regulatory advice to a group of the licensee's and tenant organisation's staff, at a site meeting, on the recently revised regulations. The licensee's duties and the regulatory expectations of the various role holders, such as when undertaking site projects using contractors, were explained to both the licensee's and the tenant organisation's staff.

## **Conventional Industrial Safety inspections.**

The ONR investigation into the live 11 kV cable strike event has been progressed during this quarter.

There have been a number of minor incidents on the Tails Management Facility construction site, relating to conventional health and safety, which have been promptly reported to ONR, including under RIDDOR requirements where appropriate. The TMF construction site part of the Urenco UK Limited licensed site is leased to the Urenco ChemPlants Limited tenant organisation.

## **Local Liaison Committee meeting.**

I participated in the meeting of the Local Liaison Committee on 9 June. At this meeting, I summarised the interventions conducted by ONR, across the Capenhurst licensed site, over the preceding six months and responded to some minor queries from stakeholders regarding the two most recent quarterly reports from ONR to the members. The well attended meeting was very constructive and conducted in a very open manner, enabling a broad range of queries from the stakeholders to be satisfactorily addressed by both the licensee and ONR. This included an informative discussion with a Ministry of Defence Project Manager, who summarised the findings of the recent stakeholder consultation exercise near Capenhurst, Capenhurst being a candidate site for the potential storage of defueled reactor pressure vessels. If Capenhurst was selected for this contract, I commented that from the ONR perspective this would not have a material effect on the overall hazard rating of the Capenhurst site. Good progress was reported by the Capenhurst Nuclear Services Limited tenant organisation, nearing completion of washing out a population of ageing uranium hexafluoride bottles, this decommissioning project serving to reduce part of the legacy radiological hazard at the site.

## **General comment on the interventions in this quarter.**

In general, ONR judged the arrangements made and implemented by the site in response to safety requirements to be adequate in the areas inspected. However, where improvements were considered necessary, the licensee made satisfactory commitments to address the issues, and the site inspector will monitor progress during future visits. Where necessary, ONR will take formal regulatory enforcement action to ensure that appropriate remedial measures are implemented to reasonably practicable timescales.

## **2.2 Other work.**

### **Meetings with the safety representatives.**

Meetings are routinely held with the licensee's team of safety representatives and during plant inspections by ONR inspectors, to support their function of representing employees and receiving information on matters affecting their health, safety and welfare at work.

The work of the safety representatives continues to make a valuable contribution to the site safety culture.

### 3 NON-ROUTINE MATTERS

Licensees are required to have arrangements to respond to non-routine matters and events. ONR inspectors judge the adequacy of the licensee's response, including actions taken to implement any necessary improvements.

ONR was promptly informed of relevant minor events on the licensed site during this period. Two of the licensee's investigation reports were also received in this quarter. The first was into a cable fire in an enrichment facility in January, where no one was injured and there was no release of radioactivity. A specialist fire safety inspector reviewed the licensee's investigation report into this event. The second related to an earlier minor legacy uranium hexafluoride "Hex Tails" leak, where again there had been no release of activity to the environment. The licensee's investigation of this latter event was reviewed by both the nominated site inspector and the Environment Agency at a site meeting on 28 May. The tenant accepted the regulatory advice to also review the learning from the previous similar event, where an ageing legacy "Hex Tails" cylinder had leaked, albeit this was understood to have resulted from internal corrosion by acidic wash liquors, rather than the external corrosion of a full uranium hexafluoride container, observed in the recent event. The tenant had appropriately commissioned a detailed and comprehensive survey of the entire inventory of such legacy uranium hexafluoride "Hex Tails" cylinders, for completion before the end of 2015. I confirmed ongoing strong regulatory interest in the storage of the legacy "Hex Tails" and that the topic would be revisited later in 2015. The licensee agreed to provide updates on a range of "Hex Tails" matters at the quarterly regulatory review meetings.

### 4 REGULATORY ACTIVITY

ONR inspectors may issue formal documents to ensure compliance with regulatory requirements. Under nuclear site licence conditions, ONR issues regulatory documents, which either permit an activity or require some form of action to be taken; these are usually collectively termed 'Licence Instruments' (LIs), but can take other forms. In addition, inspectors may issue Enforcement Notices to secure improvements to safety.

No enforcement notices were issued in this period.

One Licence Instrument was issued during this period.

A licence condition 11 Approval licence instrument was issued, to approve (i.e. to freeze the content of) the revised 'on site' Capenhurst Emergency Plan, following its three year periodic review by the licensee.

**Table 1**

**Licence Instruments issued by ONR during this period**

Date	Type	Ref No	Description
29 April 2015	Licence Condition 11 Approval	538	Approval of the revised 'on site' Capenhurst Emergency Plan. This approval has the effect of freezing the Capenhurst Emergency Plan, such that changes cannot be made to this Capenhurst Emergency Plan without a further Approval licence instrument being issued by ONR.



Reports detailing regulatory decisions can be found on the ONR website at <http://www.onr.org.uk/pars/>. The ONR report justifying the approval of the Capenhurst Emergency Plan is at <http://www.onr.org.uk/pars/2015/urenco-15-001.pdf>.

## 5 NEWS FROM ONR

ONR is changing the way that it communicates enforcement action against licensees. With immediate effect, ONR will issue a press release to key journalists to communicate issue of prohibition notices (on the day the notice is issued), and improvement/other notices (after any applicable appeal period). The press release will be published on the news centre of the ONR website and via twitter, and will be reiterated in ONR's Quarterly News.

Insight into ONR's work as an independent regulator of the nuclear industry can be found in ONR's Quarterly News. The online publication (<http://www.onr.org.uk/onr-quarterly-report.htm>) reports on the key themes and developments in each of ONR's regulatory programmes and provides an update about the ongoing changes at ONR. <http://www.onr.org.uk/index.htm>. For the latest news and updates from ONR, visit the website and sign up for our ebulletin at (<http://www.onr.org.uk/ebulletin/index.htm>).

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