

## Bradwell Site

### Draft Minutes of the 63<sup>rd</sup> Local Community Liaison Council (LCLC) Meeting

Mundon Victory Hall  
Wednesday 14<sup>th</sup> December 2016

**Present:**

LCLC Executive:

**Brian Main**  
**Cllr John White**  
Mr Sam Fox  
Mrs Jane Sparkhall

**LCLC Chairman**  
**Deputy Chairman**  
Communications Manager, Bradwell & Secretariat  
Clerk

LCLC Members:

Cllr Peter Banks  
**Cllr Brian Beale**  
Greg Black  
**Cllr Dave Bragg**  
Alan Brook  
Steve Dickson  
**Cllr Tim Drain**  
Paul Drew  
**Cllr Mark Durham**  
Graham Farley  
**Cllr Adrian Fluker**  
Andrew Pynn  
Scott Raish  
**Cllr Sam Richardson**  
Stephen Savage  
Tony Shrimpton  
Cllr Simon Smith  
**Cllr Sylvia Wargent**

West Mersea Town Council  
**Maldon District Council**  
Environment Agency  
**West Mersea Town Council**  
West Mersea Resident  
Essex County Council  
**Bradwell Parish Council**  
Engineering Manager  
**Maldon District Council**  
BANNG/ELF  
**Maldon District Council**  
Environment Agency Lead Site Inspector  
Bradwell Closure Director  
**Bradwell Parish Council**  
Maldon Town Council  
Maldon Town Council  
Rochford District Council  
**West Mersea Town Council**

**Bold type - denotes voting members**

Members of the public in attendance:

Bea Chandler  
Ian Clarke  
John Harrison



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### 1. INTRODUCTION

2809 The Chairman opened the meeting and welcomed those present, in particular those who were new or returning to the meeting. Chairman invited new attendees to introduce themselves and the following introductions were made:

- Peter Banks – West Mersea Town Councillor and resident of West Mersea
- Greg Black – Environment Agency (EA)
- Alan Brook – West Mersea Resident
- Sam Fox – Communications Manager, Bradwell and Secretariat for the group
- Paul Drew – Engineering Manager, Bradwell
- Cllr Sam Smith – Rochford District Council
- Jane Sparkhall – Minute taker, Sizewell

### 2. APOLOGIES FOR ABSENCE

2810 Clerk confirmed apologies had been received from:

- Paul Brown – Cavendish Fluor Partnership Bradwell Site sponsor
- Rowland Cook – ONR
- Russell Everard – Maldon District Council/Bradwell Legacy Partnership
- Jonathan Jenkin – NDA
- Cllr Brian Ledger – Asheldham & Dengie Parish Council
- Cllr Kay Twitchen – Essex County Council
- Pauline Ward – St Cedd's Primary School

### 3. APPROVAL OF THE PREVIOUS MINUTES

2811 The LCLC minutes resulting from the 62<sup>nd</sup> Meeting held on 1<sup>st</sup> June 2016 were considered and approved without amendment.

### 4. MATTERS ARISING FROM THE PREVIOUS MINUTES

2812 Mr John Harrison, member of the public, wanted a copy of a diagram from the previous meeting showing the numbers of containers of Fuel Element Debris (FED) items transferred from Sizewell and Dungeness. At the time, there was only one hard copy available but Mr Harrison felt it was important to compare transfers to and from Bradwell. Mr Scott Raish, Closure Director Bradwell, confirmed that the map for the Intermediate Level Waste (ILW) store showing the numbers of FED containers will be emailed out to everyone that has their email address logged with Magnox Communications.

### 5. SITE REPORT: Update

2813 Scott Raish, Site Closure Director, provided a presentation to update attendees about site activities since the previous LCLC meeting (held 1<sup>st</sup> June 2016). Mr Raish made the following key points:

- Safety and Environment: Safety performance since the last meeting has continued to be positive. Mr Raish explained the industry was having too many Lost Time Accidents (LTA) and first aid injuries. At the back end of the last six months, Bradwell is in a much better situation. Mr Raish reported two incidents: an individual fell over and cracked their elbow and another individual received a cut to the face from a drill.
- Lifetime Plan:
  - Physical Works complete in November 2019.
  - FED opportunity being realised
    - 50 tonnes of FED disposed as Low Level Waste (LLW) verses dissolving at Bradwell
    - Potential for additional FED as LLW
    - Reduces fiscal impacts on Tax Payers
  - Revised Physical Works complete in November 2018.
- Delivery Progress since last meeting – FED/ILW:



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- FED dissolved
  - o 21.7 tonnes since June 2016
  - o Discharges well below permit levels
- FED shipped as LLW
  - o 50 tonnes shipped
  - o Evaluating an additional volume
- ILW completed
  - o 93 packages
  - o 63% complete
- Permission for regional storage received October.
- Plant & Structures:
  - Removed 37 buildings since June 2016
  - Mobilised to demolish 11 structures this financial year
    - o Ponds area to enable cladding of Ponds area (Squibb)
    - o Excess buildings including workshop (Erith)
  - Reactor 1 into Care and Maintenance ready position by December 2017
- Ponds & Vaults:
  - Vaults – complete
  - Ponds area deplant & decontamination – complete
  - Ponds cladding works – design underway.
- Dose Assessment for Bradwell site:
  - Bradwell site and EA (Cefas) have independent Environmental Monitoring Programmes (sampling and analysis)
  - Cefas – Radioactivity in Food and the Environment (RIFE)
  - Bradwell – Annual Retrospective Dose Assessment (RDA)
  - Same conclusion:
    - o Majority of the dose is direct shine from the site
    - o The dose from consumption and all other pathways (aqueous and gaseous) is negligible
- Bradwell in care and maintenance phase:
  - All physical works and waste treatment operations completed
  - Site is quiescent, safe and passive safe
  - No need for any urgent response – very robust tolerance to faults
  - ONR reviewing and invited to concur before the site can move into the Care and Maintenance phase
- Site Management in Care and Maintenance:
  - Very little work taking place – no need to staff to be based at the site
  - Magnox remain responsible for Bradwell
  - Ongoing management of the site will continue, e.g.:
    - o Routine inspections
    - o Monitoring systems maintenance
    - o Local stakeholder engagement
  - Bradwell Site Director and Bradwell management team will be based at Sizewell
- Preparing the site for Care and Maintenance:
  - Four key work areas:
    - o Physical: preparing the site, plant and wastes so that they are passively safe and meet the requirements of the safety case
    - o Knowledge: collecting together and handing over all of the information about the site to colleagues at Sizewell
    - o Activities: handing over the activities that continue to need to be done in the Care and Maintenance phase to colleagues at Sizewell
    - o People: releasing the people who currently work at the Bradwell site
  - On track to support entry to Care and Maintenance in the second half of 2018
- Care and Maintenance – how will the site be protected?:
  - Robust buildings, fences, intruder alarm systems and cameras will ensure the site is secure and can detect unauthorised activity on-site
  - Alarm systems and cameras will be remotely controlled and observed
  - Security guards will be used to support these systems
  - Response plans will be prepared and tested and approved by our regulator for foreseeable



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- events
- Essex Police will be involved in establishing and testing the response plans to make sure they are appropriate
- Operations in Care and Maintenance:
  - Off-site:
    - o Continuous monitoring of plant and security systems
  - On-site:
    - o To periodically inspect the condition of the buildings
    - o To periodically inspect waste packages within the ILW store
    - o Testing site monitoring equipment
  - On-site activities will be planned into packages of work
    - o Most activities performed on yearly basis
    - o More detailed inspections every 5 years
  - Annual work is expected to take a few weeks while 5-yearly visits may take about 6-8 weeks
  - Reactive work will occur through:
    - o Plant monitoring through off-site monitoring centre
    - o Response to external event (e.g. high wind speeds)
  - Planned projects (e.g. waste package transfers)
    - o Defined periods of work
- Socio-economics:
  - Magnox socio-economic scheme is managed on behalf of the NDA, with an annual funding portfolio of up to £1 million across the 12 Magnox sites
  - Three levels of funding available:
    - o Up to £1,000 for small projects neighbouring Magnox sites
    - o Up to £10,000 capital expenditure towards a sustainable project
    - o Over £10,000 to support large projects that help towards mitigating the impact of decommissioning
  - Visit <https://magnox socioeconomic.com/> for more information
- Mr Raish presented images of the state of the site as of May and July 2016 then a future generated image of what the site would look like in Care and Maintenance in November 2018
- Mr Raish went on to talk about sample results post discharge one year ago based on approximately 70 discharges. Bradwell are now in excess of 220 discharges and still below the permit requirements that continues to be monitored for each and every discharge

- 2814 Cllr Adrian Fluker, Maldon District Council, wanted it recorded that no Essex County Councillors were present today. Essex County Councillors are crucial to this meeting especially as Essex County Council (ECC) is acting as planning authority. Cllr Fluker went on to say that he was concerned about the proposed movement of MOSAIK<sup>®</sup> casks containing Intermediate Level Waste (ILW) from Sizewell and Dungeness to Bradwell. Cllr Fluker advised the group that the preferred option and agreed route by Essex County Council takes vehicles from Southminster station to Bradwell going through Steeple Road, Southminster which is very narrow and two vehicles cannot pass. Furthermore, the road is being closed as a result of the planning application that has been granted. The residents of Southminster accept that everything has to come through one part of the village but are very angry about the traffic management scheme which allows vehicles to divert from the agreed route. Cllr Fluker hopes that Magnox, with the benefit of local knowledge, will support him in agreeing that the use of Steeple Road is not the right way to go. Mr Raish informed Cllr Fluker that the Magnox Waste Programmes department are interfacing with ECC and will work with him on a response.
- 2815 Mr Graham Farley, Mersea Island Environment Alliance, resident and representing Blackwater Against New Nuclear Group (BANNG), wanted to know how much FED is left for processing that is not scheduled to be shipped away from Bradwell. **ACTION: Mr Raish will come back to the group with the figures.**
- 2816 Cllr Peter Banks, West Mersea Town Council and resident, wanted to know that if waste treatment would be completed by the time the site goes into Care and Maintenance, how long would FED be treated before sign off in November 2018 and is there a change of direction now that the site have started to move a higher proportion of FED to Drigg? Mr Raish advised that part of the FED cannot go to Drigg and has to be dissolved but the site is working with Drigg to maximise how much can be sent to their Low Level Waste Repository (LLWR) and minimise how much has to be dissolved. Mr



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Raish confirmed that dissolution of FED will finish in May 2017 assuming that Drigg can potentially take more FED.

- 2817 Mr Ian Clarke, Mersea resident, was concerned that the previous site operator had indicated to the meeting that the Care and Maintenance phase would begin around December 2015 and wondered whether there were any key elements that could be identified that caused the delay. **ACTION: As there were no NDA present, the question will be forwarded and answered at the next meeting.**
- 2818 Ms Bea Chandler, Mersea Island resident, wanted to know if Bradwell are going to finish processing FED by May 2017 why the site asked an open ended permit from the EA. Mr Raish advised that the permit needed updating and when the paperwork was originally raised, Bradwell needed to clear 172 tonnes of FED of which, 53 tonnes were cleared to go to LLWR in Drigg. There is now an additional amount that Bradwell want to send to Drigg and not put through the dissolution process. There has nominally been around 20 tonnes that can be dissolved at Dungeness. The EA will respond to the question in their section.
- 2819 Mr David Bragg, West Mersea Town Council, wondered if there is any intention of importing material and FED from anywhere else. Mr Raish confirmed that there is no intent to import Fuel Element Debris to dissolve at Bradwell.
- 2820 Cllr Brian Beale, Maldon District Council, was concerned that residents have not received sufficient information on vehicle and transport movements. Members of the public will need to know the size of the vehicles, actual radiation measurements that are likely to be found on the outside of the vehicles relative to the original spent fuel flasks, the frequency of traffic and if it will be supported by another vehicle travelling in front of the transport. **ACTION: Mr Raish advised that there will be another LCLC in June 2017 before Bradwell begin to receive packages from Dungeness and Sizewell and he proposed that he will brief the group on transport and current thinking on the receipt and handling of ILW as details have not yet been finalised. Mr Raish will also give a compare and contrast briefing that will show the radiation levels on the previous spent fuel movements and what is expected with ILW transport.**
- 2821 Mr Alan Brook, West Mersea Resident, mentioned that Mersea island does not have the support of Essex Police and noted that Essex Police are facing major funding cuts and wondered how Essex Police are expected to maintain 'passive safety' at the site during the Care and Maintenance phase. Secondly, Mr Brook wanted to know if there was some kind of air traffic control regulation or defence on site against terrorist attacks. Mr Drew advised that 'passive safety' in the Care and Maintenance phase meant that there would be no live systems to maintain or pumps in use. The physical works that are being carried out now means that there is no need for live works. Mr Brook understands that the site will be a stable quiet block, but wanted to know about what measures would be taken on any outside influence. Mr Drew said that this is different from what is meant by passive safety in the Care and Maintenance phase and covers the security side. If any unwanted people access the site, security will know about it and are able to respond in the right period of time using the physical security arrangements such as sensors, cameras and building intruder alarms. These are part of the defences and part of the guardian arrangements with Essex Police to make a response in a timely fashion and that is the work that the site will be undertaking with Essex Police to ensure Bradwell has robust arrangements before it goes into Care and Maintenance. Both the Office of Nuclear Regulation (ONR) and Civil Nuclear Security (CNS) have agreed that the arrangements in place are robust. Mr Raish advised that ONR and CNS air traffic control arrangements have changed recently.
- 2822 Ms Sylvia Wargent, West Mersea Town Council, wanted to know if there will be physical guards on the Bradwell site. Mr Drew advised that guardian arrangements are being looked at with the ONR and CNS to decide the appropriate arrangements for Bradwell. These have not been determined yet.
- 2823 Mr Graham Farley, Mersea resident wanted to know more about the socio-economic plan as so many people are still concerned about the discharges, FED discharges and the effect on public health and the environment. Mr Farley asked if Magnox will agree to fund the local community to contract a suitably qualified university organisation to test and repeat any additional monitoring of samples of the seabed, sediment and water in the immediate discharge area. Mr Raish said that as this was one of the written questions that was already submitted, he will get answers out to all the email addresses provided so everyone gets the same answers.



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- 2824 Cllr Fluker advised that the consultation period to stakeholders for the traffic management plans closes in two weeks' time and it would be helpful if Bradwell could email the answers out as soon as possible to get the necessary responses to Essex County Council.
- 2825 From the presentation, there was some confusion about who would carry out the remote monitoring. On questioning, Mr Drew confirmed to Mr Harrison that remote monitoring would be carried out at Sizewell in the near term. Mr Drew clarified that there are three sites in the region: Sizewell, Bradwell and Dungeness. Effectively, as each site goes into the Care and Maintenance phase they will be managed by the next local site, when the last site goes into Care and Maintenance, all three sites will move to a nationally focused management arrangement.
- 2826 Mr Harrison wanted to know about the discharges graph within the presentation and wanted an explanation on the sharp peaks that occur randomly throughout year and although below the EA permit limit, is there reason for it? Mr A Pynn from the EA will answer this within his presentation later in the agenda.

### 6. NUCLEAR DECOMMISSIONING AUTHORITY (NDA) UPDATE

- 2827 Chairman had received apologies from the NDA and a monthly update for November was provided prior to the meeting.

### 7. OFFICE FOR NUCLEAR REGULATION (ONR) REPORT

- 2828 Chairman had received apologies from the ONR but has annotated the period report for July – September. He noticed that under heading: 'Non-Routine Matters' there were no incidents reported and under 'Regulatory Activity', no Licence Instruments or Enforcement Notices were issued.
- 2829 Cllr Banks wondered whether there was an answer to the matter that Mr Blowers raised at the last meeting when he drew attention to the headlines in the Maldon and Burnham Standard about the performance of the foundations of the boilers that were reported in an alarmist manner. The ONR deferred the discussion of it and it is not covered in their latest report. Chairman advised that Mr Blowers said he was specifically going to write two questions to him about that and the graphite in the reactor buildings, but none were received.
- 2830 Mr Harrison pointed out errors in the Foreword of the ONR report citing 'Sizewell' instead of 'Bradwell'.
- 2831 Although in the future, Cllr Brian Beale wanted to know what will be monitored from Sizewell when arrangements get transferred over. This would be useful to allay fears later on when Bradwell goes into Care and Maintenance.

### 8. ENVIRONMENT AGENCY (EA) REPORT

- 2832 Mr Andrew Pynn, EA Site Inspector for Bradwell site, drew attention to his report, dated December 2016 and in particular to the following sections:
- *Stakeholder Communications:* The EA is currently consulting on their draft 'minded to' decision for the three environmental permit variations. Details of the consultation as well as draft permits and application documents can be found at the following location:  
<https://www.gov.uk/government/publications/cm0-7hp-magnox-limited-consultation-on-draft-decisions-and-environmental-permits-advertisement>  
EA have completed the assessments and the bulk of these is non-radioactive and has been carried out by a separate part of the EA. Mr Pynn and his team have not been involved in the permit determination process. Assessments have been conducted by water quality experts within the agency. They have come to a conclusion that there is little information that would cause the EA to refuse the application. Unless further information comes to light that changes their view, the EA are minded to go ahead with the variation. The EA believes that a decision on the permits will be made at some point in January 2017.
  - *Site Inspections:* two inspections have been carried out since the last meeting focusing on management arrangements, suitability of staff, qualifications, training etc. and aqueous waste management which includes the FED treatment process, discharges and sampling arrangements the site conducts and the analytical arrangements, the quality assurance of the



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process of collecting the samples, analysing and reporting to the regulator. On both situations, the EA found arrangements were adequate and suitable although they did make a few recommendations that the EA would like the operator to follow up on.

- *Care and Maintenance*: With the increased focus on arrangements in Care and Maintenance has driven the EA to review their work internally and are moving towards a more regional working solution bringing in the inspector for Sizewell into the fold at Dungeness. In the future the EA will be conducting joint reviews of the arrangements implemented at Bradwell.
- *Annual Review of Safety, Security and Environment (AROSE)*: Sizewell site hosted the combined performance review for Dungeness, Bradwell and Sizewell in May 2016. Performance overall good with some areas requiring continued improvement.
- *Permit Variations*: Mr Pynn advised that the variations are quite low key. Ultimately Magnox has not applied for any new processes or to increase any amount of discharges. The substance of the application is essentially to change the discharge route and the reason the EA have undertaken significant assessments is because the discharge route does not incorporate the pre-dilution aspects as it did before. EA permits do not ordinarily routinely contain any limitations on time; they are essentially open ended permits for the life of the site. There was a time element to the last permit which had been removed. The removal of the time element brought it in line with permits across the country to normalise the process. The EA see no need to have a time restriction on them because there is a limited amount of FED for dissolution at Bradwell and the EA have modelled the potential impacts based on the entirety of the stock of FED and some of the FED has been sent off site. Therefore the EA assessments are pessimistic in nature and the assessments are over a small period of time so in terms of the environmental consequence, if the treatment time is elongated, in effect it actually results in more favourable environmental conditions and so there was no reason to put a time limitations on the permits.

- 2833 Ms Chandler thinks that the public are unhappy about the fact that permits are open ended and cannot see a reason for not putting an end date on them even if it is for a three or five year period. Mr Pynn said, as a matter of routine and environmentally speaking, there is no need to put end dates on the permits.
- 2834 Mr Farley was concerned that the discharges the EA are proposing started in January and are undiluted, which has a different dispersion pattern. Mr Farley believes that the EA were asked to reconsider and go for a variation and to consultation because of the green conservation zone. Mr Farley agreed that the permit was continuous but the environmental aspect of the permit had expired. Mr Pynn stated that the role of the EA is to provide a limitation on discharges to the environment. All discharges from Bradwell are significantly below those limits. Mr Farley wanted to know why did the EA write to Magnox saying that the permit had expired but allowed them to continue and needed documentation to proceed for a new variation. Mr Farley continued that the EA allowed unpermitted discharges and were aware that this situation is currently being heard in the European court. The European court has agreed there is a case against the EA and has also forwarded details to parliament which has been supported by Bernard Jenkin who has agreed to second it. Mr Farley reported that both parliaments agree that the EA has broken the law. Chair considered that this is outside the remit of the meeting and asked that as and when deliberations come through in due course, the subject can be raised at this meeting. Mr Farley believes that the EU court has far more knowledge of the workings of the environmental protections and law in particular to the protected sites around the estuary.
- 2835 Cllr Sam Richardson, Bradwell Parish Council, was concerned about surface water run-off during the Care and Maintenance phase and wondered whether there will be any implications for additional permitry during this phase. Mr Pynn advised that it is expected the conditions of the permit will change as a result of the Care and Maintenance phase and there will remain standard requirements in terms of environmental protection and the expectation that Sizewell A's operations are adequate to prevent any discharges to the environment that may have an impact.
- 2836 Cllr Banks queried the EA stance and basing their ideas as being 'mindful' of the variation. Mr Pynn said the premise of the consultation forms the opening page and of the documentation. The EA have not hidden their assessments or hidden the fact that the assessments do not conclude or do not give any reason to refuse the application which is the entire premise of the consultation.
- 2837 Mr Brook interjected with a typical example of the EA's false premise in that Mersea Island and Mersea and Tollesbury oyster bays do not exist as part of the consultation area and there appears to be the premise that there are only oyster beds and only oyster shellfish in very small designated areas that does not take into account everything else in the rest of the estuary. Mr Pynn can only



speaking about the radiological impact on shellfish and in these terms the EA assume that the habitats are everywhere and adopt the worst case in that habitat. The EA also assume they are close to the discharge as they can be. Mr Pynn went on to say that the points raised today are the very reason the EA is undertaking this consultation. Mr Pynn emphasised that every point raised and responses from the EA will be documented in their final decision. Mr Brook said that part of the problem is that there is a very large amount of data to get through which is not possible to reference or search, there are no indexes and the public get very little time. Mersea is not included in the consultation in an open way and would like to be included. Mr Pynn advised that everyone is included in the consultation and the LCLC had been informed over the last 18 months that this consultation is going to be taking place.

- 2838 Ms Chandler said if emitting dissolved FED was part of the decommissioning, presumably the EA should put an end date on the permits before the site goes into Care and Maintenance and produce new permits to cover what the EA need to do during that phase. Mr Pynn advised that the plan is covered in the Magnox strategy to cease FED dissolution and discharges before Care and Maintenance comes into effect. Ms Chandler wondered whether a variable date could go on the permits. Mr Pynn advised that the EA would not do that because they assess impacts on the environments and those impacts are not necessarily time dependant. The basis of the EA assessment is based on an input and that input does not change when dissolution is over two years or ten years. Ms Chandler was concerned that Magnox will still be able to emit after the site goes into Care and Maintenance. Mr Drew interjected that the ONR would be invited to agree the site has put itself in a position suitable to go into Care and Maintenance i.e. passive, quiescent and safe etc. Mr Drew went on to say that the ONR would not agree for the site to go into Care and Maintenance if it still had FED left over to dissolve. Mr Pynn added that in giving the site permission to make those discharges, the EA expect the management arrangements and facilities to support it and so they would expect that the relevant expertise to remain on site, the facilities are maintained and the discharges are still monitored etc. If Magnox chose to continue FED discharges into the Care and Maintenance phase, essentially they would not be in that phase because they would still have a significant amount of staff on site to manage dissolution.
- 2839 Mr Ian Clarke, Mersea resident, advised that since the last LCLC, the University of Plymouth supervised by the UK government's Cefas, published a report on a research related to effects of low levels of tritium (below normal permitted levels) on shellfish including mussels, oysters and cockles – these exist in the Blackwater. The research showed DNA damage on the species and noted that tritium is an element of the discharge of which approximately 35% is technically released in to the Blackwater. Mr Clarke would like to flag this up for the record and the consultation as this research had been published very recently and sponsored by the UK government.
- 2840 Mr Pynn introduced his colleague Mr Greg Black who will present on requirements on monitoring. The EA does conduct its own independent review of Magnox monitoring which goes into producing the annual Radioactivity in Food and the Environment (RIFE) report and the assessments made within.
- 2841 During the past two years, the EA have undertaken a review of the environmental monitoring at Bradwell and have made some substantial changes. Mr Black presented the following on environmental monitoring at Bradwell:
- *Environmental monitoring:*
    - Discharges from a nuclear site are subject to controls and limits specified in an EA permit
    - Operators are required to monitor and report their discharge levels to the EA
    - The EA undertake their own independent monitoring
    - The EA is responsible for monitoring non-food parts of the environment: sediments, water, seaweed, grass, soil and dose rate
    - The Food Standards Agency (FSA) is responsible for monitoring the food chain: fish, shellfish, milk and vegetables
    - The Office of Nuclear Regulation (ONR) is responsible for monitoring direct radiation from site
    - The results from the three organisations are used to assess total dose and reported in RIFE



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- *Monitoring at Bradwell:*
  - The EA have published guidance on their expectations for monitoring: 'Radiological Monitoring Technical Guidance Note 2 – Environmental Radiological Monitoring'
  - The EA undertook a review of all monitoring programmes in 2015
  - The outcome from each review a Decision Document which was shared with the operators and local stakeholders
  - As a result of the EA review and, in recognition of public concern, the EA have enhanced their monitoring arrangements at Bradwell for the duration of the Fuel Element Debris (FED) treatment process
  - Several new monitoring locations as requested by local stakeholders
  - Monitoring programme Decision Document for Bradwell was shared with the LCLC
- *Monitoring at Bradwell: pre-review*
  - Mr Black presented a map showing the original gamma dose rate monitoring of six locations at and around Bradwell
  - Mr Black went on to present a map of the original programme showing the Bradwell sediment sampling locations of less than ten
- *Monitoring at Bradwell: post-review*
  - Mr Black presented a map showing twenty new sample locations taken twice a year which indicate how significantly the EA has enhanced its monitoring programme.
  - The new map also shows more than twenty locations increasing the geographical spread of sediment sampling
  - The information and raw data is available from the online portal and is summarised in the RIFE report
- *Monitoring at Bradwell – RIFE reporting year*
  - The outcomes from the EA monitoring are combined with FSA's and ONR's data to give a total dose which is reported in RIFE
  - Mr Black presented the total dose graph for Bradwell from 2010 to 2016 showing a slight increase from 2015 to 2016 due to emitting direct radiation from site but remains less than 2% of the public dose limit
  - Mr Black then went on to present a selection of data from the new locations and compare them to the original locations including monitoring and sediment sampling of Caesium (Cs-137) and Cobalt-60 (Co-60)
- *Conclusions*
  - The EA have recently undertaken a review of their environmental monitoring programme at Bradwell
  - The programme has been enhanced as a result of public concern with discharges associated with the FED treatment process
  - Several new monitoring and sampling locations have been added
  - Total dose at Bradwell has been decreasing over recent years and is currently estimated at 0.017mSv per year which is less than 2% of the public dose limit of 1mSv per year
  - Environmental monitoring data indicates that the FED programme at Bradwell has not had a significant impact on concentrations of radioactivity in the environment

2842 Mr Pynn continued the presentation and wanted to respond from a couple of queries earlier regarding spikes in discharges and total quantities of discharges over the year. Mr Pynn presented the latest trend and the most recent data from Magnox. The graphs showed the monthly liquid and gaseous discharges from the Bradwell site against 10% of the annual limit including liquids: Tritium, other radionuclides and Caesium-137 and gaseous: Beta emitting particulate; carbon-14 and Tritium. So far in 2016, in terms of Tritium, Bradwell has reached 450GBq (Gigabecquerel) released this year against the limit of 6,000GBq; Carbon-14 has reached 17GBq released against the permit limit of



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900GBq and Beta particulate has reached 400MBq (Megabecquerel) against the limit of 6,000MBq. There has been a slight increase in terms of Tritium but the EA are still seeing negligible amounts of discharge which is negligible against the permits. Mr Pynn emphasised that these results are from the data in the new monitoring programme that local residents asked the EA to set up.

- 2843 Mr Clarke wanted to know if there were limits below the annual ones recorded such as hourly, daily and monthly limits so the effect of shock discharges are monitored. Mr Pynn explained that the permit has quarterly notifications levels within it which would represent less than a quarter of a limit and if there were spikes in the discharges, that would be notified to the EA by the operator.
- 2844 Ms Richardson wanted to know what baseline data the EA used to establish whether a reading was normal or abnormal. Mr Pynn explained that there are standard monitoring points that have been established in RIFE for the last 20-30 years, but because these were in response to public concerns over discharges of the treatment of FED, the EA essentially based them on background sampling data that were available before the FED discharge sampling. Ms Richardson wanted to know if the EA will continue to monitor regardless of whether it is an enhanced monitoring programme and whether Magnox are going to mirror something similar. Mr Pynn clarified that in terms of the FED element, the EA will continue to monitor after FED dissolution finishes for a period of time to ensure that there is no lag or concentration etc. In terms of surveying the area as a whole, the EA will continue with the arrangements as part of it informs their research interest over the long term as to what happens to the caesium and cobalt-60 etc. over time. In terms of Bradwell's monitoring programme, the EA would expect a period of monitoring the environment to ensure the results match the EA expectations.
- 2845 Mr Brook wanted to know if there was any sudden spike in discharge, is the EA reliant on Magnox to inform them or would the EA be able to pick it up independently? Mr Pynn advised that the EA do not directly monitor discharges, only the environment. Mr Raish interjected and said that the EA do follow up independent reports and it will be picked up in due course. The EA are not counting on Magnox disclosing any anomalies and there is an independent sampling system that would pick up any irregularities. Mr Brooks wanted to know a bit more about the independent reports and Mr Pynn advised that there are several systems of assurance but the main one are the results obtained from the automatic sampling system from the site which cannot be switched off. Mr Brooks said the query relates around not having a large single spike being spread over 365 days and then the assumption that because it falls within the annual limit, there is no concern. Mr Pynn advised that it was a valid concern but the EA does not see operations conducted in that manner and the spikes or peaks represent fluctuations in terms of site aspirations and the data is captured in a robust way that cannot be misinterpreted.
- 2846 Ms Wargent wanted to know why the EA only monitor two large lanes of oyster beds. Mr Pynn cannot comment on the situation but added that the EA cannot monitor everything and suspects that this is not radiological monitoring but more of a standard routine water quality monitoring and outside this remit. Mr Pynn went on to say that there is also information gathered by Cefas for the Habit Survey and the EA use the results from that to pick what they consider to be the worst locations to monitor and use those points in the monitoring programme. If other points have not been considered then together with Cefas, the EA would have probably decided that in fact they have the better area that will give more information.
- 2847 Cllr Banks was concerned about how long after the EA will monitor any run off from site once Bradwell goes into the Care and Maintenance phase. Mr Pynn explained that if the site is still making discharges which contain radioactivity then the EA would expect those to be monitored until the discharges cease. There are two aspects to the monitoring which cannot be confused. One is the discharge monitoring that takes place every single time without question by the operator and there is background monitoring of the environment. The environmental monitoring programme will start to contract as time goes on and as the EA results show no widespread contamination they will start to reduce the amount of points they sample. With regards to discharges, the EA expect every single discharge to be monitored by Magnox. Mr Pynn confirmed that monitoring will start to reduce when the site is in full Care and Maintenance.
- 2848 **ACTION: Mr Brook would like copies of the slides that show the new monitoring locations around the site.**
- 2849 Mr Farley was concerned that according to the EA permit and the decision document, the EA state there is not a monitoring programme for the native oyster. Under the Clean Seas project, oysters are



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checked every three years but there is no requirement to check oysters in the EA permit. Mr Pynn advised that the monitoring of shell fish would be a matter for the Food Standards Agency, the EA monitor the environment, however, this type of monitoring would be included within the Magnox programme and therefore they are being monitored regularly.

### 9. LCLC CHAIRMAN'S FEEDBACK

- 2850 Chair advised that he attended a meeting of SSG Chairs in London highlighting what is going on nationally and anything affecting Bradwell had been reported today. Chair went on to explain that the meeting allows all the SSG Chairs to get together and look out for items which will generate concern and is a very good channel of communication. It indirectly allows Chairs to communicate outside meetings and provides a good base for networking.
- 2851 Cllr John White, Deputy Chair, advised the group that he attended a meeting with the Radioactive Waste Management (RWM) and it was to update members on what is happening with Geological Disposal Facility (GDF). The group is aware that waste will be stored at Bradwell until a GDF is available. At the very earliest a GDF will not be available until 2040. RWM are restarting their bid to consider not only places where there are suitable rock formations but to give every District Council a chance to have a say on whether they would like their area investigated and see if it is suitable to host a GDF.
- 2852 Mr Clarke wanted to know what priority the ILW stored at Bradwell on an interim basis would have in terms of moving it into a GDF? Cllr White advised that considerations would be sought from volunteer areas before the strata of the soil in that area is investigated so the priority of movement on stored ILW cannot be determined at present.

### 10. ANY OTHER BUSINESS

- 2853 Mr Clarke wondered if there was a report from the Bradwell Legacy Partnership (BLP). Chair advised that the BLP are looking at a number of projects around creating work or creating tourism that leads to work. The BLP are also looking to set up a business advisory centre. Chair is impressed with the activity and energy that goes into the projects and it is a very positive set up for the area.
- 2854 Ms Wargent wondered whether the SSGs (or the LCLC) will continue after Bradwell is placed into Care and Maintenance. Chair advised that as Bradwell will be the first to go into Care and Maintenance, other groups from around the country will want to know what happens and whether public interest disappears or whether there still be information that could be conveyed to the others post Care and Maintenance. Chair believes that the meetings will continue as they are funded by the NDA and it will be important for the NDA too in what happens post Care and Maintenance. Mr Raish interjected that placing Bradwell into Care and Maintenance is as important to the NDA as it is to the area. The NDA have retired a liability and Mr Raish believes that there will be some kind of public engagement or stakeholder engagement for some time.
- 2855 Mr Harrison wanted to know if the sound system will be available at the next meeting. Chair advised that there was a problem today but should be sorted out for next time.

### 15. DATE AND TIME OF NEXT MEETING

- 2856 Wednesday 7<sup>th</sup> June 2017, Mundon Victory Hall, 9.30 for 10.00am

### 16. CLOSE

- 2857 Chairman closed the meeting at 12:05.