



Dungeness A Emergency Arrangements

Approval of the revised Dungeness A Accident and Emergency Arrangements

Project Assessment Report ONR-SDFW-PAR-17-063
Revision 0
March 2018

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Published 01/2019

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EXECUTIVE SUMMARY

Approval of the revised Dungeness A Accident and Emergency Arrangements

Permission Requested

Magnox Ltd (the licensee) has written to the Office for Nuclear Regulation (ONR) requesting approval of proposed amendments to the Dungeness A site Accident and Emergency Arrangements.

Background

Magnox Ltd. is in the process of decommissioning the Dungeness A site. The site ceased generating in 2006, and finished defuelling in 2012. Consequently, most of the nuclear hazard has now been removed.

The licensee has previously demonstrated to ONR's satisfaction that a radiation emergency as defined by the Radiation Emergency Preparedness and Public Information Regulations (REPPPIR) Regulation 2(1) is no longer reasonably foreseeable. Consequently, the requirements for an operator's emergency plan and off-site emergency plan are no longer required by REPPPIR (Regulations 7 and 9).

Commensurate with the change in the hazard profile, the licensee has proposed changes both to its organisation and its arrangements for dealing with incidents on site. As required by Licence Condition 11, emergency arrangements, the licensee has written to ONR to request approval to alter or amend the Dungeness A Accident and Emergency Arrangements.

Assessment and inspection work carried out by ONR in consideration of this request

I have assessed the changes proposed by the licensee in terms of the changes to the documented arrangements, the sites emergency response organisation and the facilities and equipment that will be maintained to support the arrangements.

I am satisfied that the change to the arrangements to account for the cessation of 24/7 shift working and the adoption of office-hours working is reasonable. I consider the revised arrangements are structured appropriately for the site. The simplified emergency response organisation reflects the longer response times which can now be afforded for responding to foreseeable events since the site has defueled and has remediated most of its radioactive waste.

The licensee has demonstrated the proposed arrangements to the ONR site inspector. ONR judged this to be an adequate demonstration which provides evidence that the licensee would still retain adequate capability to respond to incidents on the site.

Matters arising from ONR's work

There are no matters outstanding from ONR's assessment.

Conclusions

I am satisfied that the revision to the accident and emergency arrangements are justified, as the licensee has previously demonstrated to ONR's satisfaction that a nuclear off-site emergency is no longer reasonably foreseeable, and the revised arrangements are structured proportionately to cover the reduced hazards remaining on the decommissioning site.

I am satisfied that the licensee's revised proposals meet the requirements of the Licence Conditions (LC's) and Ionising Radiation Regulations (IRR17), and are in compliance with ONR's published standards and guidance.

I consider that the proposed accident and emergency arrangements continue to provide a suitable overview of the licensee's arrangements in their entirety and contain sufficient detail to enable the licensee to safely deal with an on-site emergency should it arise.

Recommendation

I recommend that:

- Licence instrument 515 be issued in respect of site licence number 94 under LC 11(3) to approve the amended Dungeness A Accident & Emergency Arrangements, Issue 4 – 07 November 2017.

LIST OF ABBREVIATIONS

AVDS	Advanced vacuum drying system
DC	Duty controller
EPCC	Emergency Planning Consultative Committee
ILW	Intermediate level waste
IRR	Ionising Radiation Regulations
LC	Licence Condition
MXL	Magnox Ltd.
ONR	Office for Nuclear Regulation
REPPIR	Radiation Emergency Preparedness and Public Information Regulations 2017
RoA	Report of assessment

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PERMISSION REQUESTED

1. Magnox Ltd (the licensee) has requested the Office for Nuclear Regulation's (ONR) 'Approval' under Licence Condition 11(3), emergency arrangements, for its proposed amendments to the Dungeness A site Accident and Emergency Arrangements, (Ref. 1). This revision is documented in issue 4 of the Accident and Emergency Arrangements (Ref. 2).
2. The Licensee currently has accident and emergency arrangements (Ref. 3), which is approved at issue 3. Licence Condition (LC) 11(3) requires the licensee (Magnox Limited) to ensure that no alteration or amendment is made to an approved emergency plan unless ONR approves that alteration or amendment. This report presents the basis for ONR approval of the licensee's proposed new arrangements.
3. The proposed changes to the plan have been through the licensee's due process and have been considered and endorsed by its nuclear safety committee, (Ref. 4).

1 BACKGROUND

4. Magnox Dungeness A site is in the process of decommissioning. The site ceased generating in 2006, and the reactors and fuel ponds are now completely defuelled. Consequently, most of the nuclear hazard has now been removed.
5. After defuelling had been completed the licensee provided ONR with a revised Report of Assessment (RoA) (Ref. 5), as required by the Radiation Emergency Preparedness and Public Information Regulations (REPPiR) Regulation 5(1) and 6(4), (Ref. 6). This RoA concluded that it is not reasonably foreseeable that a member of the public could be exposed to a dose in excess of 5 mSv as a result of a radiation emergency.
6. Following assessment, (Ref. 7), ONR agreed that a radiation emergency as defined by REPPiR Regulation 2(1) is no longer reasonably foreseeable at Dungeness A, (Ref 8), and consequently an operator's emergency plan and off-site emergency plan are no longer required by REPPiR (Regulations 7 and 9). In 2014 ONR approved a revision to the Licensee's emergency plan which removed the requirement and capability to deal with an off-site nuclear emergency (Ref. 9).
7. The licensee now intends to adopt an office hours working pattern as all the work requiring 24/7 shift working has now been completed. This requires the accident and emergency arrangements document to be updated to account for the site not being manned during the night, whilst still complying with the duties the licensee still has for managing incidents under the Ionising Radiation Regulations (IRR17) and Licence Condition 11 requirements.
8. As required by LC11 (3), the licensee has written to ONR to request approval of the revised accident and emergency arrangements, (Ref. 1).

2 ASSESSMENT AND INSPECTION WORK CARRIED OUT BY ONR IN CONSIDERATION OF THIS REQUEST

9. I have assessed the licensee's request and reviewed the previous submissions and correspondence. I am satisfied that the revised arrangements are reasonable because a radiation emergency is no longer reasonably foreseeable. The requirements of the Licence Conditions and the Ionising Radiation Regulations (IRRs) however, do still apply. These require the licensee to make and implement adequate arrangements to deal with incidents on site and to prepare contingency plans for reasonably foreseeable radiation accidents.

10. The submission is consistent with relevant good practice for office working utilising call out arrangements via a written emergency plan to cover silent hours
11. In my assessment of the proposed revised accident and emergency arrangements I have considered the differences between the extant plan, (Ref. 3), and proposed new arrangements, (Ref. 2). I have confirmed that the proposed arrangements are compliant with the requirements of ONR guidance, (Refs 12 and 13). I have also considered the licensee's performance in the recent demonstration exercise, (Ref. 14).

2.1 KEY CHANGES TO EXISTING ARRANGEMENTS

12. The key changes from the current approved emergency plan are:

Documented Arrangements

13. The revised arrangements are structured for sites where there is office-hours manning pattern with silent hours during the night-time and on Sundays. Where additional specific care and maintenance tasks are required (extended hours) the arrangements include provision for additional response capability if necessary. The basis of the proposed arrangements is that tasks are risk assessed and where foreseeable accidents are identified that require actions to mitigate their effects or reduce harm to the public, workers and environment, then contingency plans will be documented, resourced, equipped and rehearsed as required. The following summarises the key points:
 - A generic set of contingency plans have been developed which cover all reasonably foreseeable events on the site during both normal and silent hours.
 - The radiation accident contingency plans have been drawn up in compliance with the Ionizing Radiation Regulations 2017. Conventional accident contingency plans have also been drawn up to sit within the common arrangements.
 - Where additional emergency response may be required by site specific tasks or risk assessment, further contingency plans may be produced by the task owners (e.g. when projects carry out tasks where no contingency plan exists).
14. I consider the revised arrangements are structured appropriately for the site, where there is reduced routine activity, but where additional varied decommissioning programmes are undertaken at times, which may temporarily increase risks and require specific emergency capabilities to be available for the duration of the task.

Emergency Organisation

15. The site emergency organisation has been revised to reflect the proposed office hours working pattern. Of particular note is the change of role title from Shift Team Leader to Duty Controller.
 - The Minimum Manning on site remains at 4 persons, but this is now composed of 1 Duty Controller, 1 Responder, 1 Security Guard Emergency Services Liaison Officer and a Security Guard to control site access. These personnel function identically to the previous arrangements during normal working hours, however the role names have been changed to emphasise the move away from continuous shift working.
 - The duty controller (DC) is authorised to declare a site incident and or a major security incident. They are also responsible for overall control and supervision of the site following any such decision. The DC will be informed of any site

event and will take such steps necessary to help the affected team(s) to manage the event. The DC, on receiving information of an incident, is empowered to utilise all resources and equipment as required to bring the situation under control.

- During an incident and emergency, the Responder may be required to investigate the initial alarm and provide information to the DC. On providing the information they will support the DC's response as directed. The responder role requires competency in Radiological Monitoring and First Aid.
- The role of the Emergency Services Liaison Officer is to ensure that the Emergency Services can gain rapid access to the Site, are briefed on the situation and hazards and are deployed effectively.
- A security guard will remain at the entry point to the site to maintain the security of the site and allow access and egress of the emergency services in a timely manner.
- During working hours, personnel will be utilised in their normal daytime operational roles, for which they have undergone training to be deemed suitably qualified and experienced, (SQEP). They will however be assigned and routinely tested in relevant roles for accident and emergency arrangements.
- Health Physics advice will be available 24/7.
- The ability for the licensee to call upon emergency services or other external organisations in the event of an emergency remains unchanged.

Emergency Facilities

16. The following arrangements are proposed in relation to accident and emergency facilities:

- The site will maintain locations from which an incident can be managed identified on the site statutory notice board. Each identified location will have a list of documentation and equipment required. This documentation and equipment will be managed and maintained through the work management process. The site will maintain equipment for use during an incident.
- Alarm outstations are positioned near to the security lodge, which remains permanently manned by guards, and is included on the routine operator rounds to monitor the panels

Response Times

17. Radioactive waste of ILW category is being processed into approved containers for storage in the interim storage facility and is set to continue until 2020. There are approximately 120 packages to be processed between now and completion of the project. Although the recovery of the waste will be achieved during office hours or periods of extended working, it is likely that the AVDS drying plant will be actively drying the waste in the storage containers during silent hours periods.

18. I have considered this in the context of the risk and have noted that the risks of an incident resulting in a nuclear release are very low. The packages are robust ductile cast iron containers and will shield the waste in the event of external fire. The advanced vacuum drying system (AVDS) plant is designed to be fail-safe in that any equipment fault will shut down the drying process and inert the package. The security guards are trained to respond to any incident as per the site accident and emergency arrangements. I am content that the arrangements for operation of the AVDS system in silent hours periods are adequate. Details of the safety features of the AVDS system are given in reference 17.

19. I have assessed the revised arrangements against the requirements of Licence Condition 11 as defined in ONR's inspection guide (NS-INSP-GD-011), (Ref. 13), the Ionising Radiation Regulations (IRR17), and ONR's Emergency Arrangements Strategy for decommissioning sites (ONR-DFW-PAR-15-004), (Ref. 15). I consider that it is aligned with ONR's expectations outlined in those documents.
20. Based on this assessment and the evidence provided during the exercise (Ref 14), I am content that the response times for people to attend site adequate to meet the requirements of the safety case.

2.2 OTHER CONSIDERATIONS

21. I considered if an approval was still necessary for the Dungeness A Accident and Emergency Arrangements, and judged that due to the very low levels of nuclear risk now posed by the site, it is appropriate to consider the removal of formal regulatory control of the Emergency Arrangements.
22. The licensee has undertaken a comprehensive programme of local and site wide exercises to ensure staff are familiar with the new arrangements and can respond effectively. (Ref 16).
23. The licensee demonstrated the proposed accident and emergency arrangements to ONR's satisfaction at a site exercise on 6th August 2018, (Ref. 14).
24. The licensee has duly consulted its nuclear safety committee at a meeting on 16 Oct 2017 (Ref 4), which endorsed the proposed arrangements.
25. The licensee has consulted with the external 'blue light' emergency services and local authorities through the Emergency Planning Consultative Committee (EPCC). There are no matters outstanding from this consultation. (Ref. 19).
26. The licensee has already implemented these arrangements at Bradwell and Trawsfynydd. Magnox have completed a three-month review of the effectiveness of the arrangements and concluded that they are working adequately. (Ref. 10 and 11)
27. Overall, I am content that Dungeness A can adequately implement its Emergency Arrangements, to support the provision by ONR of the Approval Licence Instrument.
28. I have drafted the standard Licence Condition 11(3) Approval Licence Instrument, for the approval of the revised Dungeness A Accident and Emergency Arrangements and the withdrawal of the Approval of the previous Dungeness A Emergency Plan. The Licence Instrument complies with the extant ONR guidance for the preparation and issue of Licence Instruments (NS-PER-IN-001), (Ref. 18).

2.3 SUMMARY

29. Overall I consider the revised Emergency Arrangements, (Ref. 2), to be a suitable document, which aligns with ONR's guidance. I see no reason to withhold approval.

3 MATTERS ARISING FROM ONR'S WORK

30. There are no matters arising from ONR's assessment.

4 CONCLUSIONS

31. I am satisfied that the revision to the accident and emergency arrangements are justified as the licensee has previously demonstrated to ONR's satisfaction that a

nuclear emergency is no longer reasonably foreseeable. I consider that the revised arrangements are structured proportionately to a decommissioning site working to office hours.

32. The licensee successfully demonstrated the revised arrangements concerned with on-site nuclear incidents to ONR during the inspection in February 2018 (Ref. 14).
33. I consider that the proposed accident and emergency arrangements will continue to provide suitable and sufficient detail to enable the licensee to safely deal with an on-site emergency should the need arise.

5 RECOMMENDATIONS

34. I recommend that:
 - Licence instrument 515 be issued in respect of site licence number 94 under LC 11(3) to approve the Dungeness A Accident & Emergency Arrangements, Issue 4 – 07 November 2017. TRIM Ref 2017/418687.

REFERENCES

1. BWA – Letter from Dungeness A – Request for Approval Under Licence Condition 11(3) of the Amendment to Dungeness A Emergency Plan – 8th November 2017. TRIM Ref 2017/418687.
2. Dungeness A Accident & Emergency Arrangements, Issue 4 – 07 November 2017. TRIM Ref 2017/418687.
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6. L126 A guide to the Radiation (Emergency Preparedness and Public Information) Regulations 2001. (<http://www.hse.gov.uk/pubns/priced/l126.pdf>)
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8. Letter to Kent County Council – Radiation (Emergency Preparedness and Public Information) Regulations 2001 (REPIIR) – Off Site Emergency Plan- Dungeness A Site, 24th October 2013 TRIM Ref. 2013/391175.
9. Dungeness A – Licence Instrument – LI 510 – APPROVAL Granted under Condition 11 (3) of Schedule 2 attached to Nuclear Site Licence No: 93 – 14th September 2015. TRIM Ref 2015/342288.
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12. Safety Assessment Principles for Nuclear Facilities. 2014 Edition, Revision 0, November 2014. (www.onr.org.uk/saps/saps2014.pdf)
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16. E-Mails: DNA Training Programme & Local Liaison for office working arrangements TRIM References 2018/91987 - 2018/91998 and 2018/92004
17. AVDS DPAFs - safety justification for 24hr operation in office hours' mode TRIM Ref. 2018/92440

18. ONR Instruction – Preparation and Issue of Licence Instruments NS-PER-IN-001 Rev 8. January 2017. TRIM Ref 2017/8970.
19. E-Mail: DNA Training Programme & Local Liaison for office working arrangements
TRIM References 2018/91987.