

## Wylfa emergency arrangements

### Licence condition 11(3) – Emergency arrangements, Request for approval of issue 14 (rev 1) of Wylfa accident and emergency arrangements

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## EXECUTIVE SUMMARY

### Title

Approval under licence condition 11(3) to implement revised accident and emergency arrangements at Wylfa.

### Permission Requested

Magnox Limited's (ML) Wylfa licenced nuclear site has requested the Office for Nuclear Regulation's (ONR) approval to amend its accident and emergency arrangements that will result in those arrangements being consistent with defuelled ML reactor sites having contingency arrangements. This request is made in accordance with licence condition 11(3) in schedule 2 of nuclear site licence 58A.

### Background

Licence condition 11 (emergency arrangements) requires the licensee to make and implement adequate arrangement for dealing with any accident or emergency arising on the site and their effects. Since the previous approval of Wylfa's emergency arrangements in February 2017 Wylfa has completed defuelling of both its reactors, sent all fuel off-site and completed a systematic fuel free verification process. This represents a significant reduction in nuclear safety risk at Wylfa.

Following completion of defuelling, Wylfa has reviewed its duties under the Radiation (Emergency Preparedness and Public Information) Regulations 2019. Wylfa has confirmed it considers that the Regulations no longer apply to its operations on site and that no duties fall on its local authority. Against this background Wylfa has submitted, for ONR's approval under licence condition 11 (3), revised accident and emergency arrangements that are consistent with other defuelled Magnox Limited reactor sites. The issue of such an approval will have the effect of permitting Wylfa to complete an organisational transition that reflects the change in nuclear safety risk at the site; and which will no longer include an off-site emergency plan.

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

ONR has carried out a programme of assessment and inspection work to confirm Wylfa's proposal meets the requirements of LC 11; this included an observation of a demonstration exercise of the proposed amended accident and emergency arrangements; assessment of Wylfa's proposed organisational structure; and assessment of Wylfa's re-baselined post defuelling safety case.

### Matters arising from ONR's work

There are no unresolved matters from the ONR's specialist assessment and inspection work.

### Conclusions

I am satisfied that the licensee's proposed amendment of the Wylfa emergency arrangements is adequate and satisfies the requirements of licence condition 11.

### Recommendation

I recommend that in accordance with LC 11(3), ONR approves the proposed amendment to Wylfa's emergency arrangements.

## LIST OF ABBREVIATIONS

ALARP	As low as reasonably practicable
CNS	Civil Nuclear Security (ONR)
EP&R	Emergency Preparedness and Response
HOW2	(Office for Nuclear Regulation) Business Management System
LC	Licence Condition
ML	Magnox Limited
NDA	Nuclear Decommissioning Authority
ONR	Office for Nuclear Regulation
REPPIR	Radiation (Emergency Preparedness and Public Information) Regulations
RPDSC	Re-baselined Post Defuelling Safety Case
RGP	Relevant Good Practice
SAP	Safety Assessment Principle(s)
SFAIRP	So far as is reasonably practicable
WYA	Wylfa (licenced nuclear site, licence number 58A)

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## **1 PERMISSION REQUESTED**

1. Magnox Limited's (ML) Wylfa licensed nuclear site has requested (Reference 1) the Office for Nuclear Regulation's (ONR) approval to permit implementation of amended accident and emergency arrangements that will result in Wylfa's arrangements being consistent with defuelled Magnox Ltd reactor sites with contingency arrangements. This request is made in accordance with licence condition (LC) 11(3) in schedule 2 of nuclear site licence 58A.

## **2 BACKGROUND**

2. LC 11 (emergency arrangements) requires the Licensee to make and implement adequate arrangement for dealing with any accident or emergency arising on the site and their effects. To comply with this requirement, Wylfa has submitted to ONR a document titled Wylfa Accident and Emergency arrangements (sites working in contingency arrangements) (Reference 1). Previously this document was known as the Wylfa Emergency Plan (Reference 2) and this name change reflects the changes Wylfa now intends to implement to be consistent with other fuel free verified decommissioning ML reactor sites.
3. In February 2017 ONR approved the extant Wylfa Emergency Plan (Reference 2) using primary powers under LC 11(3) (Reference 3). LC11(3) requires that once approved by ONR the licensee shall ensure that no alteration or amendment is made to the approved arrangements unless ONR has approved such alteration or amendment.
4. Since the issue of ONR's approval (Reference 3) there have been several changes that have led to Wylfa's request (Reference 1) to change its emergency arrangements. These include Wylfa having completed a programme of work: to defuel the reactors and send all fuel off-site; to systematically verify the site is fuel free; and having reviewed the remaining site hazards, to write to ONR (Reference 4) to confirm that the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPPiR2019) no longer apply to its operations and that no duties fall on its local authority.
5. Under REPPiR2019 there has been a shift in responsibility for determining a licenced nuclear site's detailed emergency planning zone to the local authority who will take into account in their decision Wylfa's hazard evaluation and consequence assessment. ONR has engaged with Wylfa's local authority on its planned alteration or amendment to its emergency arrangements; and specifically on Wylfa's intention to no longer require an off-site plan (Refer to paragraph 18).
6. The issue of ONR's approval for this requested change to be implemented will have the effect of permitting Wylfa to complete an organisational transition that reflects the significant reduction in nuclear safety risk at the site (which now has the least mobile/unpassivated intermediate level waste inventory of all of the Magnox sites). After a period of monitoring the implementation of these requested contingency emergency arrangements, Wylfa plan a subsequent change in 2020 that concerns the withdrawal of 24 hour/7day shift operations at the site. This planned subsequent alteration or amendment will be subject to a further ONR approval under LC11 (3).

## **3 ASSESSMENT AND INSPECTION WORK CARRIED OUT BY ONR IN CONSIDERATION OF THIS REQUEST**

7. ONR has carried out a programme of work that included inspection of the licensee's proposal to ensure it is consistent with the requirements of LC 11; this included ONR's observation of a demonstration of the proposed amended arrangements.

8. Implementation of the licensee's proposal is based on the site having been verified as fuel free (reduced nuclear hazard) and will result in an organisational change that will see a reduction in staff numbers. ONR's programme of work has targeted:
  - 8.1 Organisational transition and subsequent ability to support the proposed contingency emergency arrangements;
  - 8.2 The licensee's re-baselined post defuelling safety case (RPDSC) with a focus on remaining risks and mitigations;
  - 8.3 Adequacy of the proposed contingency arrangements; and
  - 8.4 The completion of fuel free verification
9. ONR's Wylfa organisational transition engagement (Refer paragraph 8.1) is recorded at References 5 and 6; and assessment at Reference 7. ONR's assessment at Reference 7 noted that Wylfa had taken cognisance of learning from other defuelled ML reactor sites that had previously undergone similar organisational transition; and concluded that Wylfa's management of change process followed relevant good practice and the process had been adequately implemented.
10. ONR's engagement on Wylfa's RPDSC (Refer paragraph 8.2) is recorded at References 5, 8 and 9; and assessment at Reference 10. The RPDSC underpins the claims made by Wylfa with regard to the hazard potential from operations on the site and is therefore the basis for the revised emergency arrangements.
11. ONR's assessment of the RPDSC at Reference 10 considered Wylfa's hazard identification process for a fuel free site met relevant good practice. Recognising that the most significant consequences for both workers and the public will in future be from fires in the radioactive waste stores, ONR examined Wylfa's assessments of these faults and concluded that they are consistent with the expectations of ONR's safety assessment principles.
12. ONR's assessment of the RPDSC also recognised relevant good practice in terms of reducing risk as low as reasonably practicable (ALARP) where waste has been physically moved to storage areas where there is a lower risk of fire. In considering Wylfa's RPDSC, ONR's specialist fault studies assessor has taken cognisance of Wylfa's REPIR 2019 assessment which concludes that there is no possibility of a public dose in excess of 1mSv and as such the Wylfa site no longer comes under those regulations.
13. Reference 10 concludes that the RPDSC adequately supports Wylfa's judgements and assumptions made for the proposed emergency arrangements and ONR's fault studies specialist inspector supports permitting amendment of Wylfa's emergency arrangements under LC11 (3).
14. ONR's engagement on Wylfa's contingency emergency arrangements (Refer paragraph 8.3) is recorded at References 5, 8, 11, 12, 13 and 14; and included observation (Reference 15) of a level 1 exercise using the proposed contingency arrangements. ONR's observation of Wylfa's level 1 emergency exercise (Reference 15) concluded that the licensee has made and implemented adequate arrangements for dealing with an accident or emergency on the site. In my opinion Wylfa's proposed contingency emergency arrangements are consistent with those at similar defuelled ML reactor sites and are adequate to satisfy the requirements of licence condition 11 for a site that no longer requires an off-site emergency plan.
15. Completion of fuel free verification (FFV) is a key step in underpinning Wylfa's request to alter its emergency arrangements (Refer paragraph 8.4). Wylfa set out its FFV

strategy in Reference 16. Wylfa has now confirmed it has completed its FFV (Reference 17) and this is supported by a completed quality plan (Reference 18).

16. In accordance with its own governance and oversight process, ML's internal regulator has confirmed (Reference 19) through its inspections it is satisfied with the process Wylfa has followed; Wylfa's implementation of that process; and is confident that so far as is reasonable practicable the site is confirmed fuel free.
17. ONR's engagements on Wylfa's implementation of its FFV strategy is recorded at References 5, 6, 8, 12, 14 and 20. I am satisfied Wylfa has developed and implemented a robust FFV process that through my sampling has given me confidence that the site is now fuel free (with the exception of known partial fuel element JAD023179 (Reference 9) and fuel fragments which remain on site in adequate storage; and which is considered in Wylfa's RPDS assessed by ONR at Reference 10).
18. Wylfa outlined plans to its local authority to implement contingency arrangements following FFV at an emergency planning consultative committee meeting (Reference 21). This was followed up with a meeting (Reference 11) between ONR (including emergency preparedness and response (EP&R) specialist inspectors), Wylfa and its local authority to discuss Wylfa's transition to a site no longer requiring an off-site emergency plan. This was against the background of the changes within REPP2019 concerning the duties that move to the local authority for determining a licenced nuclear site's detailed emergency planning zone.
19. ONR's EP&R specialist inspector has confirmed (Reference 22) no objection to the issue of approval licence instrument 572. This is on the basis of ONR observing (Refer paragraph 14) an adequate on-site level 1 demonstration of the proposed contingency emergency arrangements (Reference 15).
20. ONR's Welsh region nominated site security inspector has confirmed (Reference 23) no objection to the issue of approval licence instrument 572.
21. In accordance with the memorandum of understanding ([www.onr.org.uk/documents/2015/nrw-mou.pdf](http://www.onr.org.uk/documents/2015/nrw-mou.pdf)) agreed between ONR and Natural Resources Wales (NRW) that provides a framework for how regulatory activities will be co-ordinated to improve effectiveness, I have consulted NRW on Wylfa's request to change its emergency arrangements. NRW (supported by the Environment Agency [EA]) has confirmed (Reference 24) that it has no objection to the issue of approval licence instrument 572.
22. Similar to ONR's observation, NRW recognise that Wylfa remains to complete planned enabling activities and training of role holders prior to the final phase on contingency emergency arrangements implementation (removal of 24/7 operations shift working) scheduled for March 2020. Wylfa's readiness to implement that final phase will be subject to a separate ONR approval licence instrument.

#### **4 MATTERS ARISING FROM ONR'S WORK**

23. There are no unresolved issues remaining from ONR's assessment and inspection work.

#### **5 CONCLUSIONS**

24. This report presents ONR's consideration of Wylfa's request to amend its emergency arrangements under LC11 (3). ONR has targeted Wylfa's proposed organisational transition, re-baselined post defuelling safety case, contingency emergency arrangements and completion of verification activities to confirm the Wylfa licensed

nuclear site is fuel free; which is consistent with ML reactor licenced nuclear sites that have previously completed this process.

25. In my opinion the licensee's proposed alteration or amendment of the Wylfa emergency arrangements is adequate to satisfy the requirements of Licence Condition 11. In reaching this judgement I have taken into account the following:
- ONR's nominated site and specialist inspector interventions with Wylfa's leadership team and ML executive team members on the proposed organisational transition that will support and manage the site through to care and maintenance entry.
  - ONR's nominated site inspector interventions with site staff on the proposed new contingency emergency arrangements, and the adequate demonstration of those arrangements.
  - ONR's specialist inspectors' interventions with site staff concerning Wylfa's re-baselined post defuelling safety case that will support care and maintenance preparations activities going forwards (against the background of REPIR 2019 no longer being applicable following completion of fuel free verification).
  - ONR's nominated site inspector interventions with site staff to monitor the completion of a fuel free verification process that included independent oversight from ML's internal regulator function.
  - The proposal having followed the licensee's governance process and is endorsed by its Nuclear Safety Committee.

## **6 RECOMMENDATIONS**

26. I recommend that a person with delegated authority in ONR:
- Accepts the conclusions in this report that justify issuing Approval Licence Instrument No. 572.
  - Signs Licence Instrument No. 572 giving effect to ONR's Approval of Wylfa's proposed amendment of its emergency arrangements under LC 11(3).

## 7 REFERENCES

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- 1 Wylfa letter WYF52548R dated 18 September 2019. Licence condition 11(3) – Emergency arrangements, request for approval of issue 14 (rev 1) of Wylfa accident and emergency arrangements, document WYA/EMP/001. CM9 2019/273457
- 2 Wylfa emergency plan, reference WYA/EMP/001 Issue 13, signed as approved on 12 October 2016. CM9 2016/406673
- 3 Licence Instrument 570 dated 23 February 2017. Approval under LC11 (3) of Wylfa emergency plan, reference WYA/EMP/001 Issue 13. CM9 2017/78655
- 4 Wylfa letter WYF/52549N dated 20 September 2019. Dis-application of the Radiation (Emergency Preparedness and Public Information) Regulations 2019 (REPP19) for Wylfa site. CM9 2019/279896
- 5 ONR intervention report ONR-SDFW-IR-18-191 dated 1 March 2019. Wylfa Magnox, Planned Licence Condition Compliance Inspection. CM9 2019/57196
- 6 ONR intervention report ONR-SDFW-IR-19-067 dated 7 August 2019. Magnox Limited, Wylfa, Planned Licence Condition Compliance Inspection & Defuel information gathering. CM9 2019/224061
- 7 ONR assessment dated 16 October 2019. Assessment of Wylfa transition management of change. CM9 2019/271572
- 8 ONR intervention report ONR-SDFW-IR-19-002 dated 15 April 2019. Magnox Limited, Wylfa, Planned Licence Condition Compliance Inspection & Defuel information gathering. CM9 2019/109878
- 9 ONR contact report ONR-SDFW-CR-19-393 dated 3 September 2019. ONR SDFW DCI visit, [REDACTED] & Re-baselined post defuelling safety case L4 meetings. CM9 2019/250305
- 10 ONR assessment ONR-SDFW-AR-19-041 dated 18 October 2019. Fault Analysis Assessment of the Wylfa Rebaselined Post Defuelling Safety Case. CM9 2019/286521
- 11 ONR contact report ONR-SDFW-CR-19-147 dated 23 May 2019. Magnox Limited (ML), Wylfa, Transition to contingency arrangements against background of REPP19 introduction. (Level 4). CM9 2019/148180
- 12 ONR intervention report ONR-SDFW-IR-19-038 dated 13 June 2019. Magnox Limited, Wylfa, Planned Licence Condition Compliance Inspection and meetings. CM9 2019/168135
- 13 ONR contact report ONR-SDFW-CR-19-259 dated 2 July 2019. Implementation of REPP19 2019 (Level 4). CM9 2019/186995
- 14 ONR intervention report ONR-SDFW-IR-19-106 dated 11 October 2019. Magnox Limited, Wylfa, Planned Licence Condition Compliance Inspection and meetings. CM9 2019/287756
- 15 ONR intervention report ONR-SDFW-IR-19-096 dated 23 September 2019. Magnox Limited, Wylfa, Level 1 exercise [REDACTED] CM9 2019/274044
- 16 Wylfa report WYA/REP/9678 Issue 4 dated 29 July 2019. Magnox Limited, Wylfa site fuel free declaration strategy. CM9 2019/286752
- 17 Wylfa letter WYF/52550N dated 2 October 2019. Decommissioning LC35.02 milestone closeout: Completion of defuelling and fuel free verification. CM9 2019/286752
- 18 Wylfa quality plan WYA/FR/QPC/017 Issue 1 dated 29 July 2019. Wylfa site fuel free verification quality plan. CM9 2019/286752
- 19 Magnox Limited Internal Oversight email dated 23 October 2019. Wylfa Site: Readiness Review and Fuel Free Verification. CM9 2019/310099
- 20 ONR contact report ONR-SDFW-CR-19-480 dated 25 September 2019. ONR SDFW Fuel free verification walk down observation. CM9 2019/274493
- 21 ONR contact report ONR-SDFW-CR-19-066 dated 7 May 2019. Magnox Limited (ML) Welsh region Emergency Planning Consultative Meeting (EPCC) (Level 4). CM9 2019/124155
- 22 ONR email dated 7 October 2019. ONR EP&R team stakeholder engagement, Wylfa request to implement contingency emergency arrangements - Approval LI 572. CM9 2019/295584
- 23 ONR email dated 14 October 2019. ONR CNSS team stakeholder engagement, Wylfa request to implement contingency emergency arrangements - Approval LI 572. CM9 2019/296668
- 24 NRW letter WYL/19/001/O dated 7 October 2019. Wylfa licence instrument – change to emergency arrangements. CM9 2019/295307