



**AWE Burghfield Site: Project Mensa**

**Modification to the Mensa Roof Structure  
to Accommodate the PCSR3 Stack  
Design.**

Project Assessment Report ONR-AWE-PAR-14-031  
Revision 0  
26<sup>th</sup> February 2015

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## EXECUTIVE SUMMARY

### **1 REQUEST FOR AGREEMENT UNDER ARRANGEMENTS MADE UNDER LICENCE CONDITION 20(1) TO IMPLEMENT THE MODIFICATION TO THE MENSA ROOF STRUCTURE TO ACCOMMODATE THE PCSR3 STACK DESIGN**

- 1.1 As required under its arrangements for Licence Condition 20: Modification to Design of Plant under Construction, AWE wrote to ONR on 19th November 2014 to request ONR's agreement under arrangements made under Licence Condition 20(1) to implement a modification to the Mensa roof structure to accommodate the PCSR3 stack design. This was supported by the issue of appropriate safety case documentation to ONR, the Defence Nuclear Safety regulator (DNSR) and the Environment Agency (EA).
- 1.2 The scope of the regulatory assessment required was established at an early stage and has focussed on the following areas: Civil engineering, the lightning protection system (LPS) and any potential environmental impact. ONR has taken the lead on the civil engineering work, DNSR the lead on the LPS and the EA has reviewed any potential environmental impact.
- 1.3 This Project Assessment Report (PAR) includes feedback from DNSR and the EA and concludes that the claims, arguments and evidence laid down within the safety case presented by AWE to underpin the proposed modification are judged as adequate.
- 1.4 I recommend that ONR issue LI 531 agreeing to AWE's modification to the Mensa roof structure to accommodate the design of the ventilation stack.

## LIST OF ABBREVIATIONS

DNSR	Defence Nuclear Safety Regulator
EA	Environment Agency
HOW2	(Office for Nuclear Regulation) Business Management System
ONR	Office for Nuclear Regulation
PAR	Project Assessment Report
PCSR	Pre-construction Safety Report
TAG	Technical Assessment Guide (ONR)

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## **2 PERMISSION REQUESTED**

- 2.1 Under its arrangements for Licence Condition 20(1) AWE has requested ONR's 'Agreement' to implement a modification to the Mensa roof structure to accommodate the design of the ventilation stack required following submission of PCSR3 [1].

## **3 BACKGROUND**

- 3.1 AWE has undertaken a major project, Project Mensa, to construct a new processing plant at its Burghfield site. When completed, the overall Mensa facility will replace existing production capability and provide AWE with new-build plant to modern standards. The Mensa process includes the handling of explosive, radioactive and toxic materials which will be imported, exported and held within the facility as required.
- 3.2 AWE's arrangements under Licence Condition 20: Modification to Design of Plant under Construction, require the safety case for this modification to be submitted to ONR to obtain agreement from ONR that the modification can proceed. Accordingly, AWE wrote to ONR on 19<sup>th</sup> November 2014 to request ONR's agreement under arrangements made under Licence Condition 20(1) to implement a modification to the Mensa roof structure to accommodate the PCSR3 stack design. This was supported by the issue of appropriate safety case documentation to the regulators.
- 3.3 ONR has consulted with the Defence Nuclear Safety Regulator (DNSR) and the Environment Agency (EA) as part of its consideration of the adequacy of the submitted safety case. This Project Assessment Report (PAR) pulls together the findings from assessment of this safety case taking into consideration knowledge gained during early engagement and formalised findings from assessment reports. The associated Licence Instrument comprises the formal response to AWE from ONR and on behalf of DNSR and the EA.

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

- 4.1 The process employed by ONR in carrying out its permissioning activities is defined in ONR procedures [2]. As in all aspects of its regulatory activities, ONR employs a sampling regime in the assessment of safety cases. Where appropriate specialist inspectors have applied national and international standards, the Safety Assessment Principles for Nuclear Facilities [3] and ONR Technical Assessment Guides [4].
- 4.2 The regulatory assessment has focussed on the following areas: Civil engineering, the lightning protection system (LPS) and any potential environmental impact. ONR has incorporated regulatory findings from DNSR and the EA in arriving at its regulatory decision.

### **4.3 Civil Engineering**

- 4.3.1 Following formal assessment of the submitted safety case [5] the Civil Engineering Specialist Inspector concluded that: -
- The proposed concrete repair procedure, which has been previously trialled and used successfully on the project, provides confidence in the civil engineering aspect of the proposal.
  - Consideration has been given by AWE to various dissimilar metals being used in close proximity and a factor of safety has been applied.
  - The safety case made for the modification is judged as adequate.

#### **4.4 Electrical, Control & Instrumentation (EC&I)**

4.4.1 A meeting was held between ONR and Amec Foster Wheeler Regulatory Services Division (AMEC FW RSD), who were tasked by DNSR to undertake the safety case assessment, at their Birchwood office to discuss assessment activity to-date. The aim of the meeting was to inform the decision communicated by the PAR through understanding the scope and outcome of these activities. The meeting confirmed that DNSR's assurance as to the adequacy of the submission with respect to the LPS will be sufficient to support ONR's project assessment report (PAR) from an Electrical Engineering perspective [6].

#### **4.5 EA and DNSR Input to the Assessment**

4.5.1 DNSR has confirmed that they are content that the LI agreeing to the modification to the Mensa roof structure to accommodate the design of the ventilation stack be issued [7].

4.5.2 The EA has confirmed that AWE has carried out an assessment to cover environmental issues for the stack height changes and that the EA is satisfied with the proposed modification [8].

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

5.1 ONR are content with the safety arguments presented by AWE and there are no significant matters arising.

### **6 CONCLUSIONS**

6.1 This report presents the findings from the co-ordinated assessment by ONR, DNSR and the EA of the safety case submission made in support of AWE's proposed modification to the Mensa roof structure to accommodate the design of the ventilation stack.

6.2 The claims, arguments and evidence laid down within the safety case presented by AWE to underpin the proposed modification are judged as adequate.

### **7 RECOMMENDATIONS**

7.1 I recommend that ONR issue LI 531 agreeing to AWE's modification to the Mensa roof structure to accommodate the design of the ventilation stack.

## 1 REFERENCES

1. *ONR Defence Programme – AWE – Request for Agreement under LC20 – ONR020-003 – December 2014.* 2014/444294, ONR, December 2014.
2. *ONR HOW2 Guide - Purpose and Scope of Permissioning - NS-PER-GD-014 Revision 4.* July 2014. <http://www.onr.org.uk/operational/assessment/index.htm>
3. *Safety Assessment Principles for Nuclear Facilities.* 2014 Edition Revision 0. November 2014. <http://www.onr.org.uk/saps/saps2014.pdf>.
4. *Civil Engineering NS-TAST-GD-017 Revision 3,* ONR, May 2013. [http://www.onr.org.uk/operational/tech\\_asst\\_guides/index.htm](http://www.onr.org.uk/operational/tech_asst_guides/index.htm)
5. *ONR-AWE-AR-14-014 – Modification to Roof Structure to Accommodate PCSR Stack Design.* 2015/75610, ONR, Feb 2015.
6. *ONR-DEF-CR-14-270 – AWE – L4 Meeting with AMEC Foster Wheeler RSD on Mensa Stack Modification.* 2015/67353, ONR, Feb 2015.
7. *AWE – 20150216 - DNSR Letter to ONR from DNSR re Mensa DCN2155 – OS – Feb 2015.* 2015/71675, ONR, Feb 2015.
8. *AWE – Mensa – DCN 2155 – Modifications to the Roof Structure to Accommodate the PCSR3 Stack Design – EA Input to PAR – Feb 2015.* 2015/71690, ONR, Feb 2015.