

Engineering Design Substantiation

The purpose of this Section is to summarise the key findings of the review of extant Engineering Design Substantiation assessments. The DAR's were assembled to support the recent Facility Operational Safety Case production and listed as :

DAR Annex A : Process Lines
DAR Annex B : Containment
DAR Annex C : Gas Clean-Up System
DAR Annex D : Ventilation
DAR Annex E : Civil
DAR Annex F : Material Movement
DAR Annex G : Electrical , Control & Instrumentation
DAR Annex H : Mechanical Services

As required by CSP 815 , the following topics are summarised in the following sections :

Validity of EDS assessment
Extent of existing shortfall remediation
Through life Limiting Factors , including Operational Life and Potential Ageing Effects
Deficiencies identified during the EDS

Hence the PRS at this stage confirms the continued suitability of SSC's as listed in the extant SFR report and where relevant identifies additional and potential new substantiation for those SSC's affected by recent AWE CSP methodology changes . Any recommendations for DAR re-issue are presented in Section 12.

Civil Assessment Review

Due to the relatively modern design of the plant there were no significant issues reported in the original DAR assessments and all outstanding shortfalls have been addressed. This has been confirmed by the PRS review , however it is noted that there is no mention of problems with the seismic withstand capacity of the masonry walls and this is raised as a shortfall for consideration by the shortfall sentencing committee which concluded that an update of HAZAN 4.10 would be sufficient.

Shortfall Civil -01 - Operational Safety Case – Safety Functional Requirements document Section 3.2 last paragraph “and the further substantiation of wall masonry in a seismic event need only be demonstrated by hand circulations” No mention of problems with the seismic withstand capacity of the masonry walls in the current DAR .

FAP Item PRS /FAP/009 - Update HAZAN Appendix 4.10 with information from report “Review of HAZAN 4.10 against CSP865 Section 5 (2008)”(EDMS3/800DCFED/B/A19/S1904). Review and update HAZAN to ensure

that the data is consistent with that provided in the CSP's extant on the 1st December 2010 . This should include a review of the consequences (and potentially the suitability) the masonry walls under a seismic load . The detailed assessment of this HAZAN feeds directly into sections 4, 5 and 8 of the Facility Operational Safety Case which are covered by FAP actions 17 , 18 and 21 respectively . Risk associated with this FAP item is 1E-7 Fatality /Year from Aircraft Crash.

There is also a reportable change in modern standards where The American Concrete Institute design standard for Nuclear Safety Concrete Structures (ACI 349-01) has been updated to ACIM 349-06. This does not affect the extant substantiation and so remains fit for purpose.

Hence it is concluded that notwithstanding minor additions to the seismic assessment the current building is suitable and sufficient for operations over the next 10 years and no addition to the DAR is required.