

Product Assurance

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RAL

Spire PA Status and Outlook

➤ From the IBDR

- PA Plan
- Declared Lists
- Change Control
- CIDL
- Cleanliness
- MIP

➤ Added from Agenda

- Safety
- CIL
- VCD
- System FMECA- HSIA
- Planning
- AIT

PA PLAN

➤ SPIRE Product Assurance Plan

SPIRE-RAL-PRJ-000017

Issue 1

➤ Changes To the Plan Now at Issue 1.1

- **Most of the comments from Pierre have been incorporated.**

Declared Lists

Combined list have been generated for

- **Declared Material List** **DML**
SPIRE-RAL-PRJ-001092
- **Declared Processes List** **DPL**
SPIRE-RAL-PRJ-001093
- **Declared Mechanical Parts** **DMPL**
SPIRE RAL PRJ 0001094
- **Electronic, Electrical and
Electromechanical Parts** **EEE, Parts**
SPIRE-RAL-PRJ-001095

Declared Lists

- Each of the subsystem Declared Lists have been combined into these documents with each list kept separate in a section of its own.
- Not all the required information has been recorded on the lists as required, and some lists are still outstanding.
- There is still a lot to do, to bring most of them into line with **ESA: PSS-01-700 Issue 2.**

Change Control

- **Non-Conformance Report** **NCR**
Status Report/List- **SPIRE-RAL-PRJ-0001079**
- **Engineering / Document Change Request** **ECR**
Status Report/List- **SPIRE-RAL-PRJ-0001080**
- **Request For Waiver / Deviation** **RFW**
Status Report/List- **SPIRE-RAL-PRJ-0001081**
- **Review Item Discrepancy** **RID**
Status Report/List **Number not allocated**

Change Control Status

- **Non-Conformance Reports**
6 of 7 still open re EGSE none Major.
- **Engineering / Document Change Request**
17 of 35 open
- **Request For Waiver / Deviation**
both still open
- **Review Item Discrepancy**
None of the current 19 outstanding have been closed

CIDL

- **CONFIGURATION ITEM DATA LIST** **CIDL**
SPIRE-RAL-PRJ-001134. Now at draft issue 2.

- **Most of the subsystems CIDL's added.**
Some will require updating and putting into document format.

- **Technical notes have been removed.**
 - **As it is not intended to configuration control them at instrument level.**
Instead changes to the Specification and Design documents will be made under DCR's.

SAFETY Submissions

- **Basically there are no safety issues once SPIRE is cold**
- **However it does have Cryogenics and Sorption Cooler (Pressure 80 Bar at room temp), these are identified on the Hazard Source Check sheet.**
- **Report on Pressure test etc on the Sorption Cooler and Hazard Check Sheet have been sent to ALCATEL.**
- **NCR (safety) Any NCR concerning safety to the instrument or personnel would be treated as a Major NCR. Therefore it would be forwarded to ALCATEL and ESA immediately.**
- **SPIRE do not have a separate Safety NCR database.**

CIL. WCA & Derating

- **CIL List presented at IBDR (not Formally Maintained)**
 - SPIRE does not have a formal CIL.
It has weekly, (more frequently if required), Tele-con's that track critical items.

- **Worst case analysis and Derating analysis**
 - Have been requested from the Subsystems, although as this primarily concerns electrical / electronic components they are not required from Some of the subsystems.
Those that are, are being pressed to supply them.

FMECA - HSIA

- **System FMECA and effect on short circuit (propagation of failures).
The System FMECA will cover all system including interfaces for Launch and Flight**
- **Hardware/Software Interaction Analysis (HSIA).**
- **RAL have promised this by the end of April
(Re Meeting we had with Jan on the 21 March)**

Configuration Status. & VCD.

➤ Configuration status

- **SPIRE still has far to many documents still in Draft.**
- **Aim to get all the documents listed on the CIDL into the configured state before our next meeting.**

➤ Verification Control Document. (VCD)

- **Database is up and running currently being updated against the CQM & STM Test Plans**

AIT, MIP's & KIP's

➤ AIT Procedure Preparation.

- AIT Plan for STM in Draft, is almost completed, with all the Test plans, issue, date, etc included.
- AIT Plan for CQM is in hand.

➤ Mandatory & Inspection Points (MIP's)

➤ Key Inspection Points (KIP's)

- **Are detailed in the AIT plan above**

ESA will be informed of the place, time and date of a MIP Typically Four weeks before, by fax or Email, and reminded two days before, by Email or Telephone.

Cleanliness

- **The SPIRE PA Plan and the PACS Cleanliness Plan are very similar and when used In conjunction with the Cleanliness document produced by Bruce Swinyard will meet the requirements**
- **Except Spire will only bakeout Materials (TML) at 80°C for 48Hrs, not at the higher temperatures specified in the PACS plan**

“ If it’s clean enough for PACS its clean enough for SPIRE”

Planning

- ✓ **Declared List's to be to ESA: PSS-01-700 Issue 2.**
By Next Quarterly PA meeting.
- ✓ **All documents listed on the CIDL to be "Configured"**
By Next Quarterly PA meeting.
- ✓ **NCR's, ECR's, RFW's, and RID's**
to be closed or have agreed actions to close them,
By Next Quarterly PA meeting.
- ✓ **WCA & Derating Analysis**
To be passed to ESA By end of May.
- ✓ *With testing and delivery from subsystems coming closer there will be considerable work to do and currently very little resource to do it with.*

PROBLEMS

- **The problem areas are resource, Money and person power. (*politically correct statement*)**
There is not enough of either available to meet the requirements for Hardware, Software or Documentation.

- **Spire Have too options:-**
 1. To obtain more money from somewhere. This is being actively pursued.
 2. To Prioritise what SPIRE can deliver and what it can not. *Decisions whether we want Hardware or documentation will have to be made if option 1 is unsuccessful.*